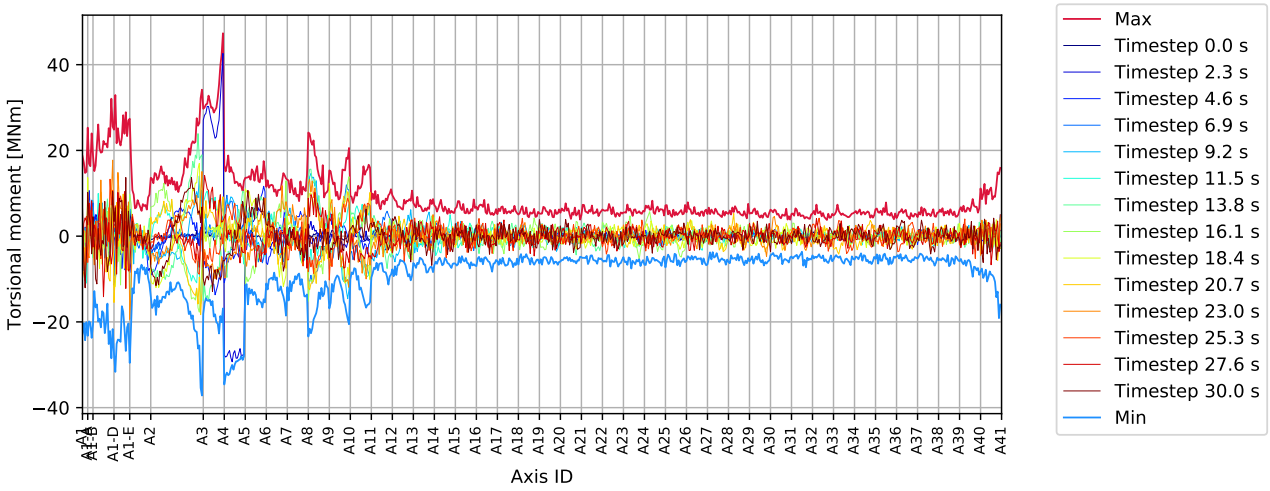

Figure 3.885: P A4 80deg - bridgegirder : Torsional moment [MNm]

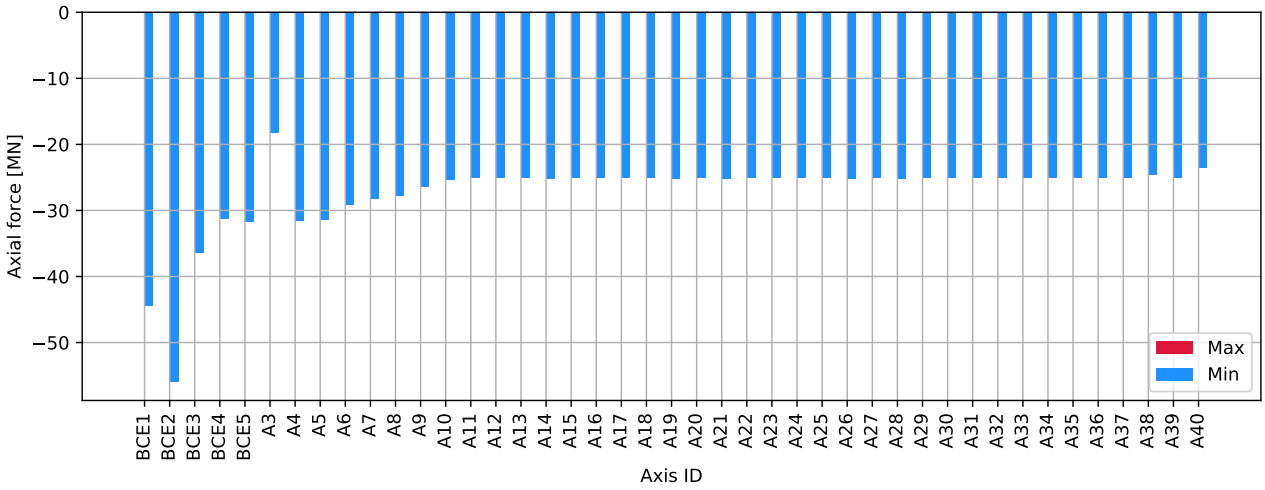

Figure 3.886: P A4 80deg - columns bottom : Axial force [MN]

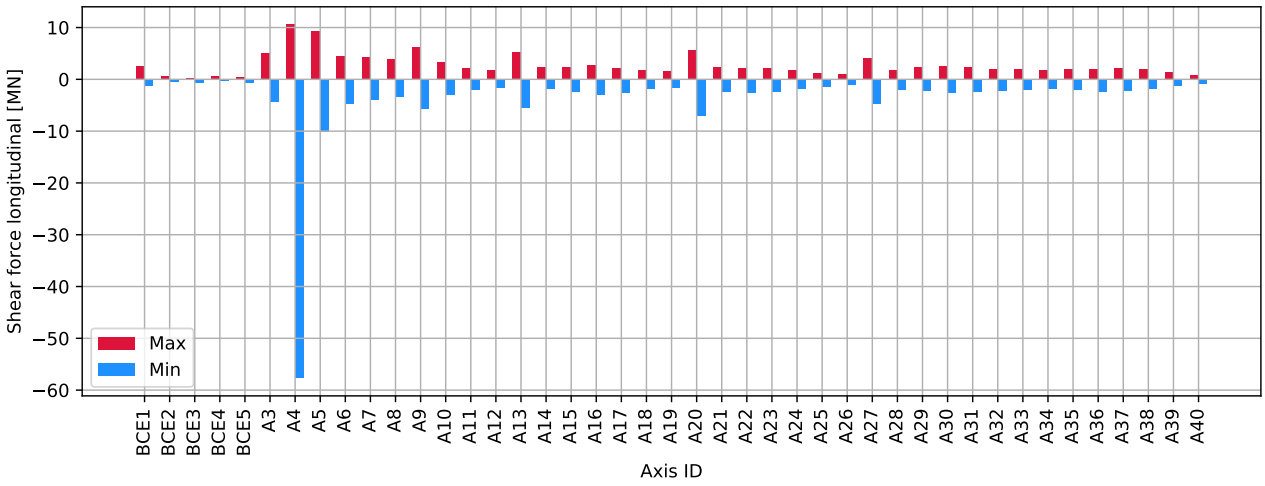

Figure 3.887: P A4 80deg - columns bottom : Shear force longitudinal [MN]

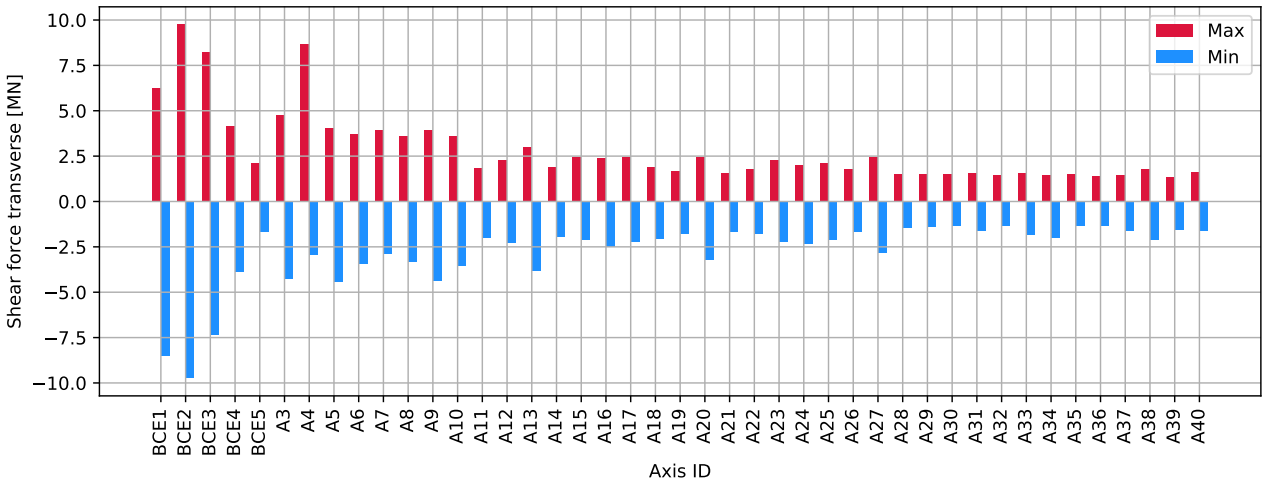

Figure 3.888: P A4 80deg - columns bottom : Shear force transverse [MN]

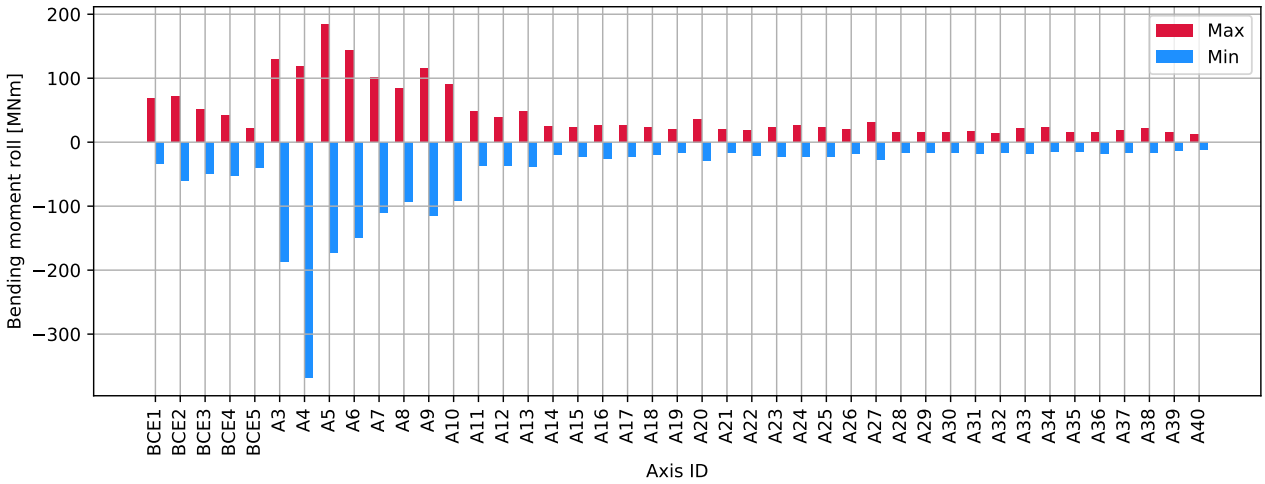

Figure 3.889: P A4 80deg - columns bottom : Bending moment roll [MNm]

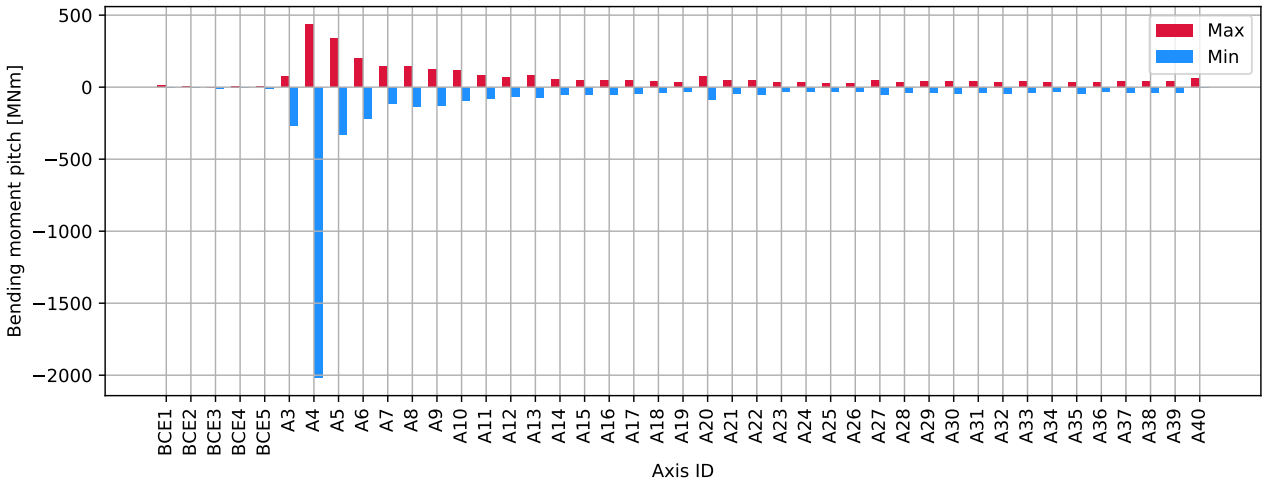

Figure 3.890: P A4 80deg - columns bottom : Bending moment pitch [MNm]

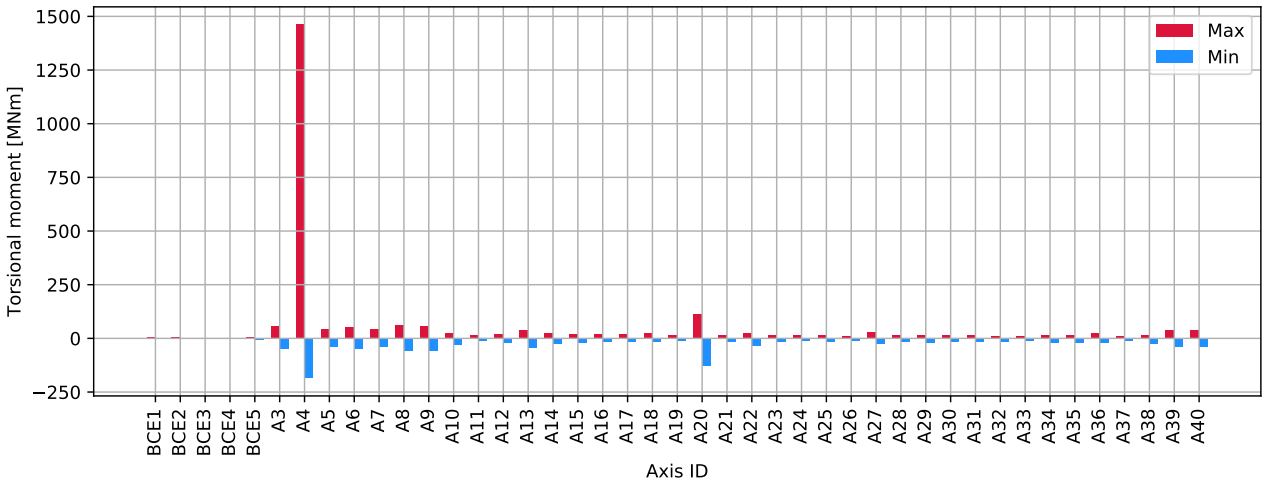

Figure 3.891: P A4 80deg - columns bottom : Torsional moment [MNm]

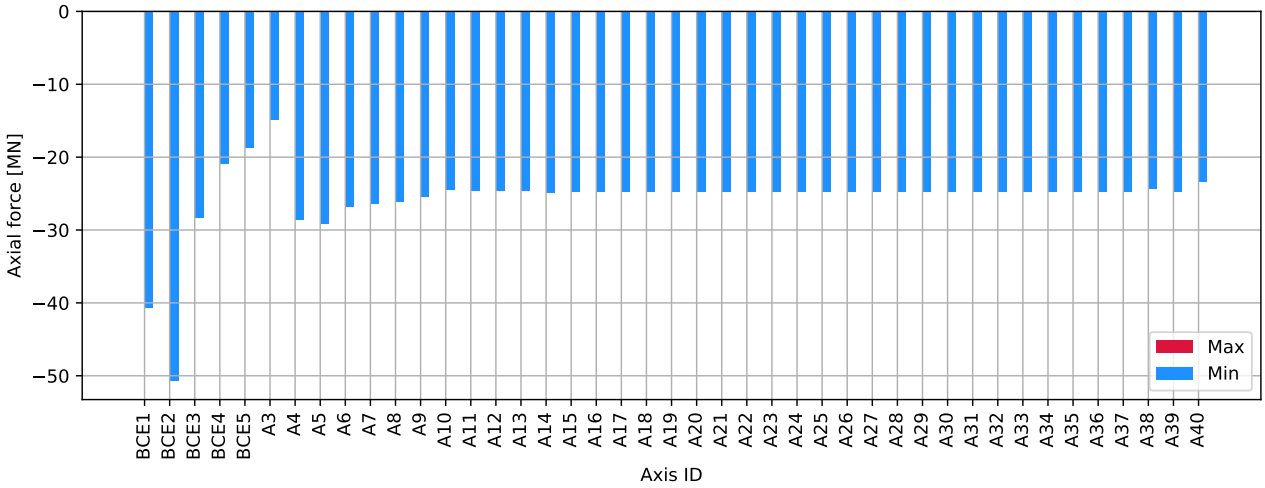

Figure 3.892: P A4 80deg - columns top : Axial force [MN]

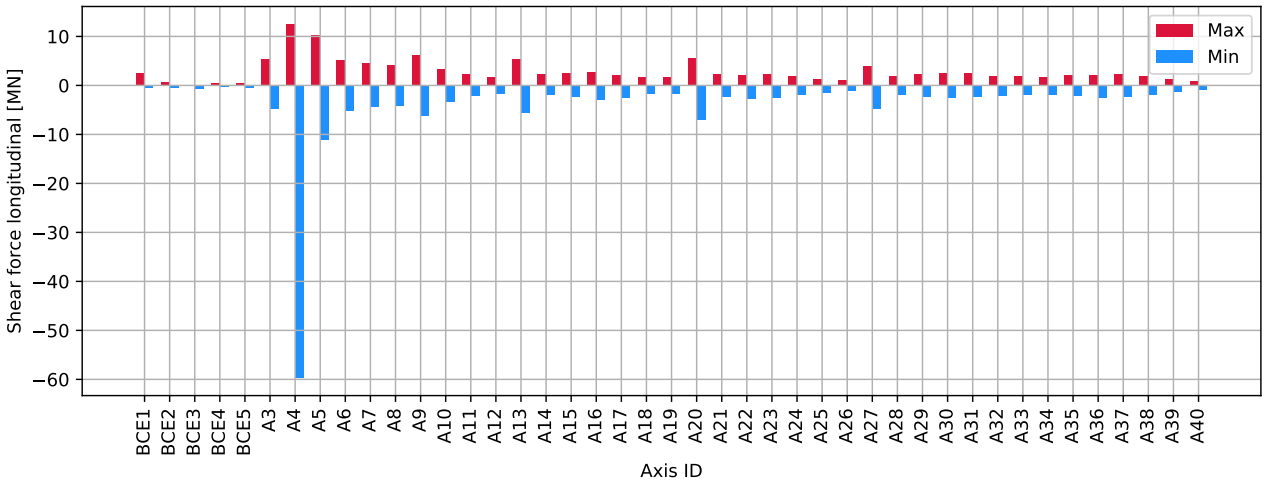

Figure 3.893: P A4 80deg - columns top : Shear force longitudinal [MN]

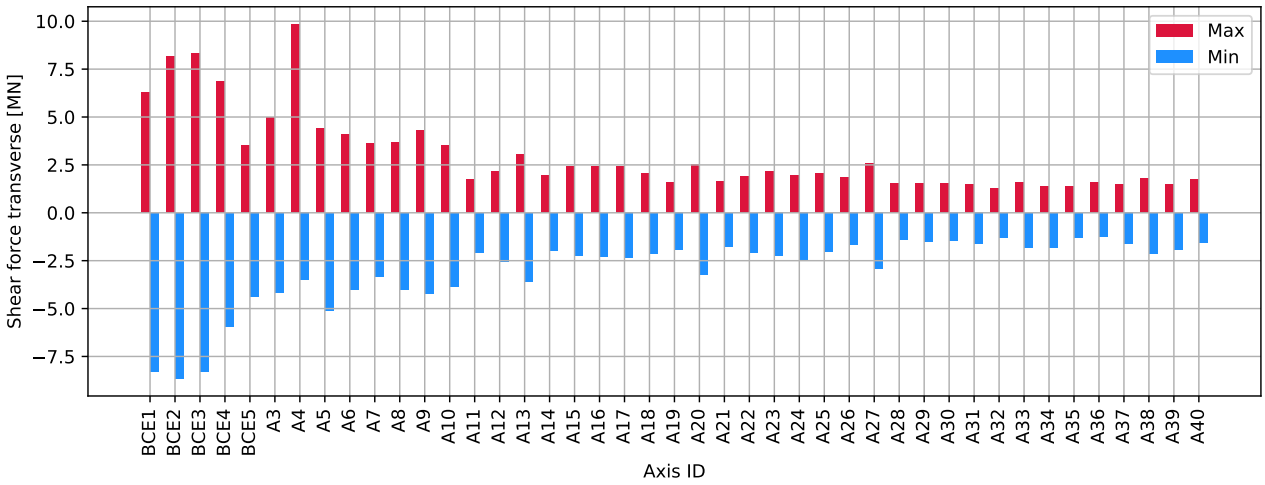

Figure 3.894: P A4 80deg - columns top : Shear force transverse [MN]

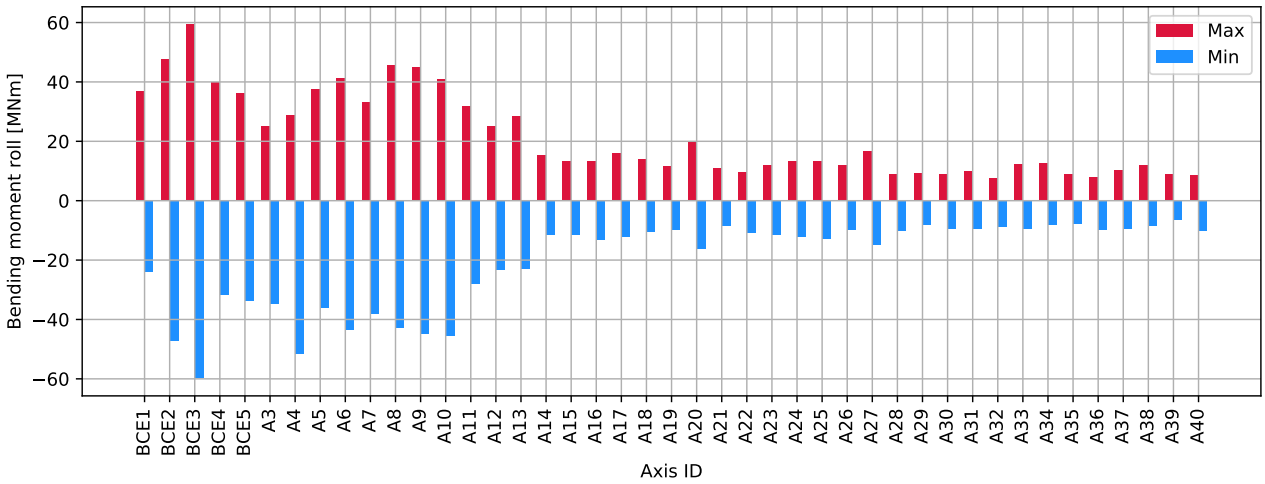

Figure 3.895: P A4 80deg - columns top : Bending moment roll [MNm]

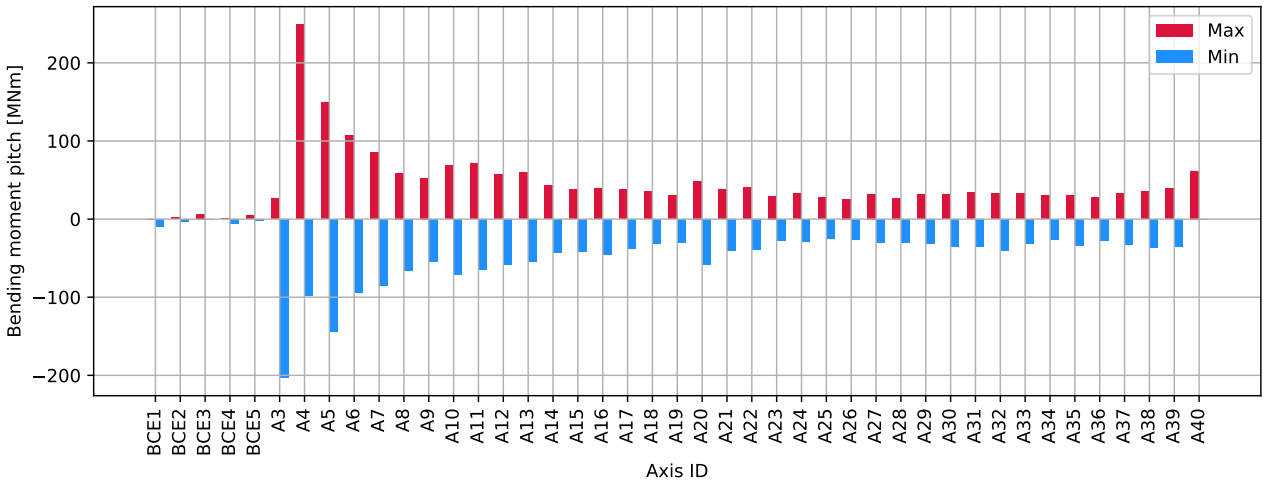

Figure 3.896: P A4 80deg - columns top : Bending moment pitch [MNm]

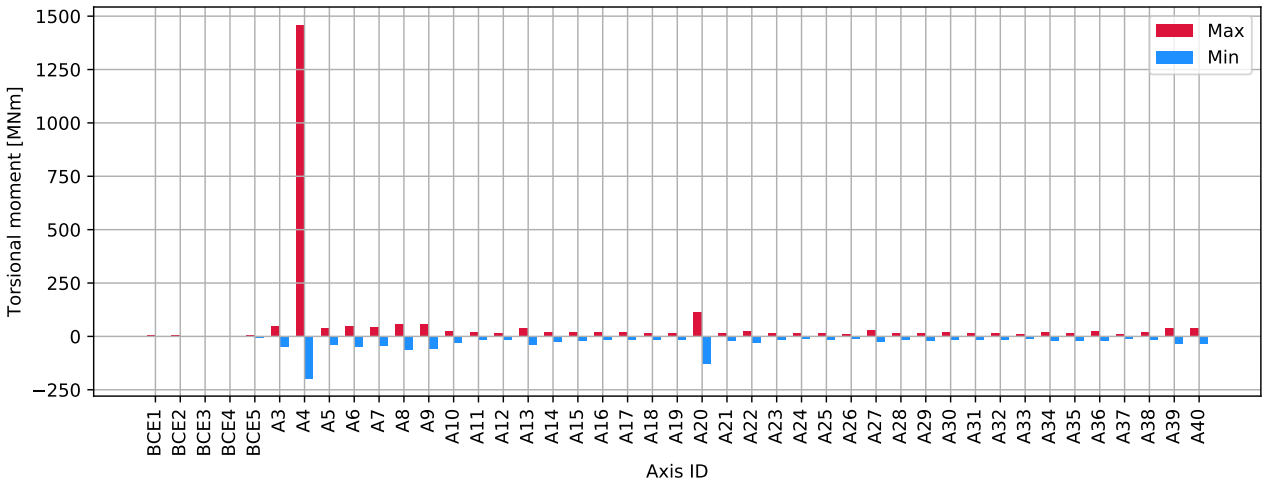

Figure 3.897: P A4 80deg - columns top : Torsional moment [MNm]

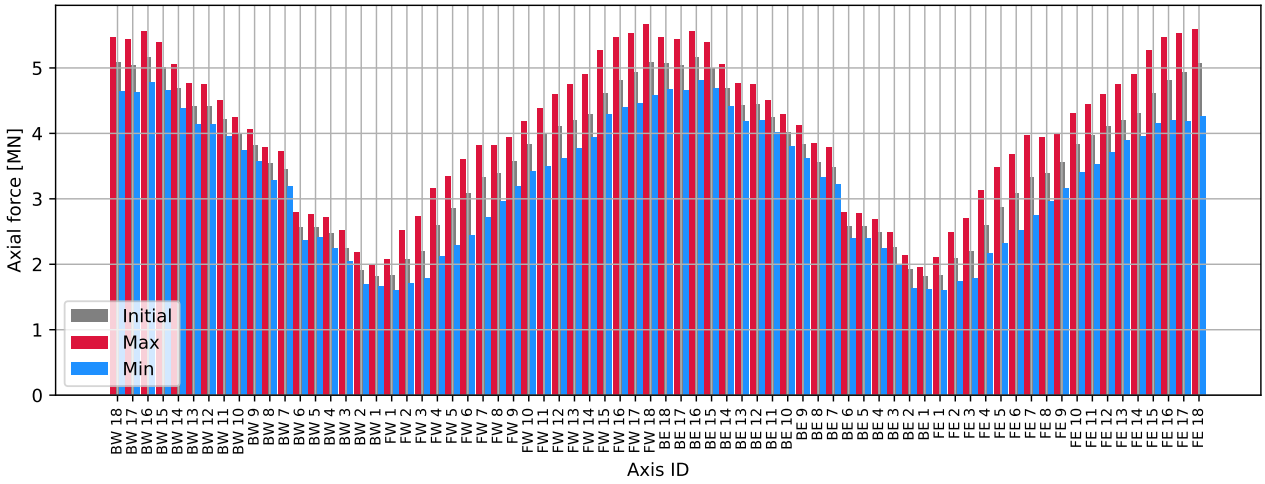

Figure 3.898: P A4 80deg - cables : Axial force [MN]

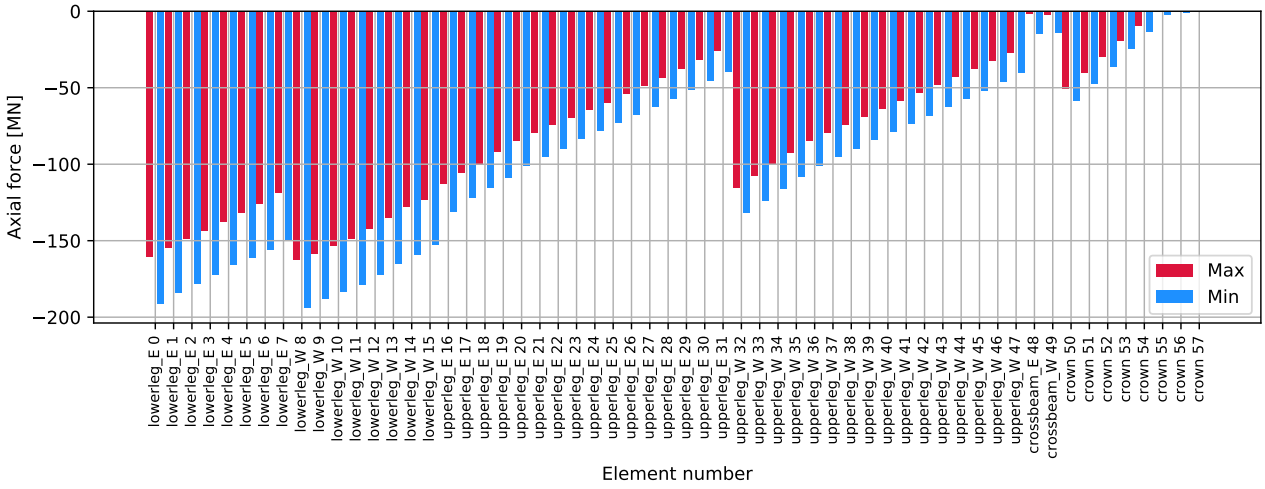

Figure 3.899: P A4 80deg - tower: Axial force [MN]

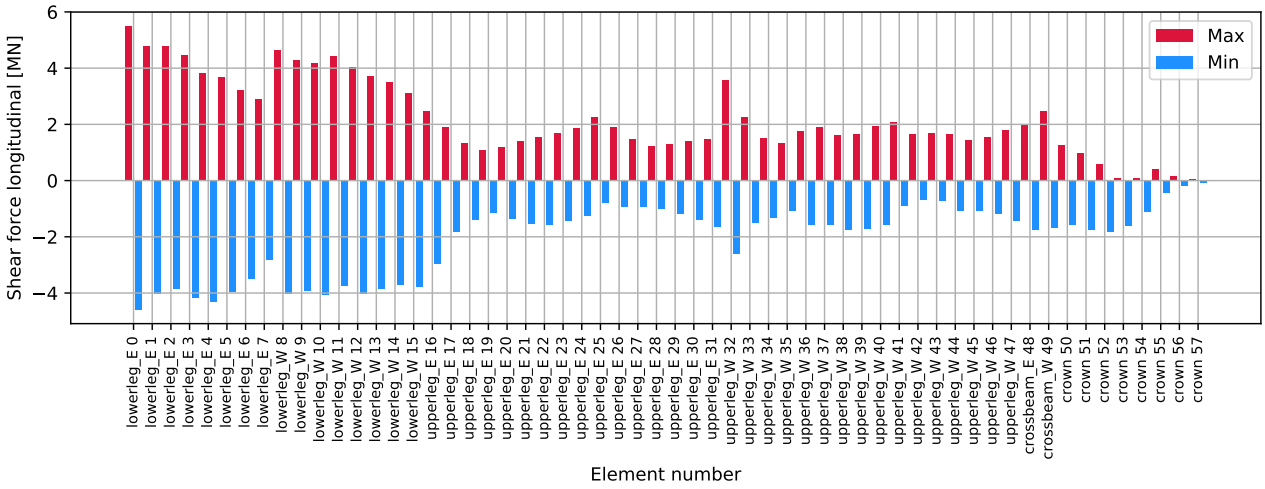

Figure 3.900: P A4 80deg - tower: Shear force longitudinal [MN]

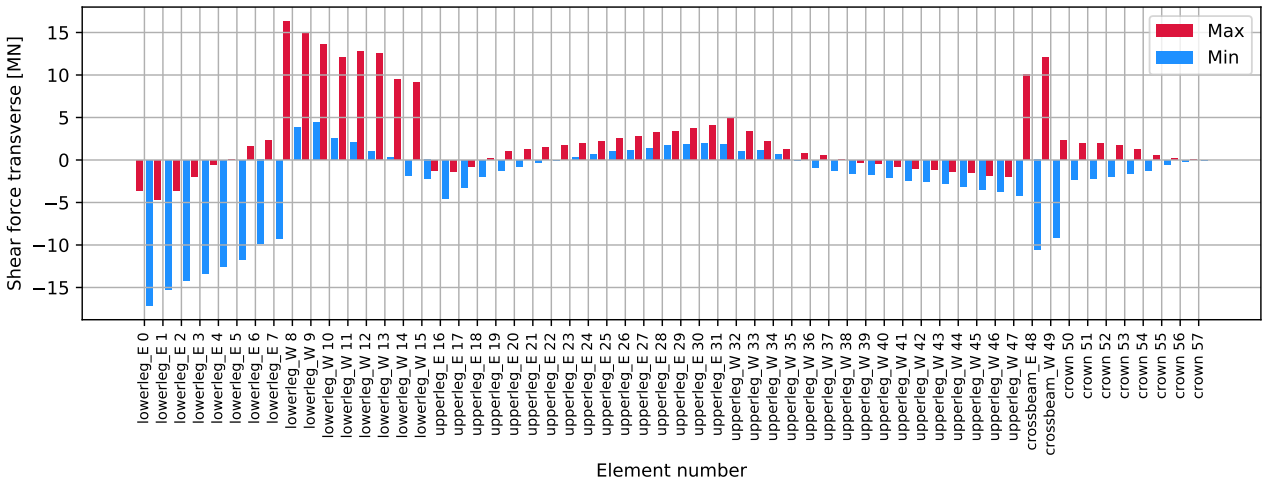

Figure 3.901: P A4 80deg - tower: Shear force transverse [MN]

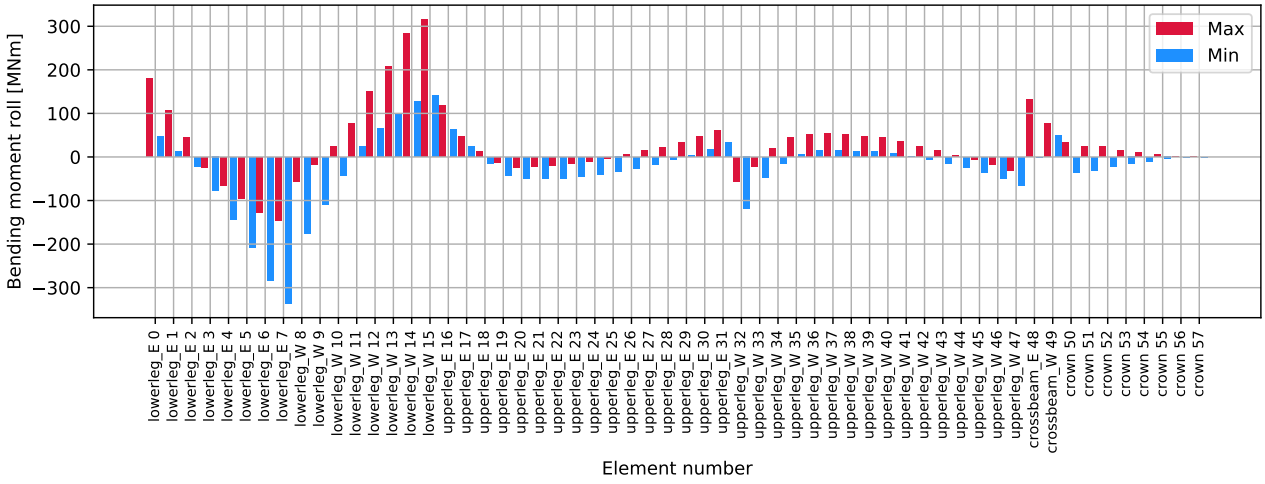

Figure 3.902: P A4 80deg - tower: Bending moment roll [MNm]

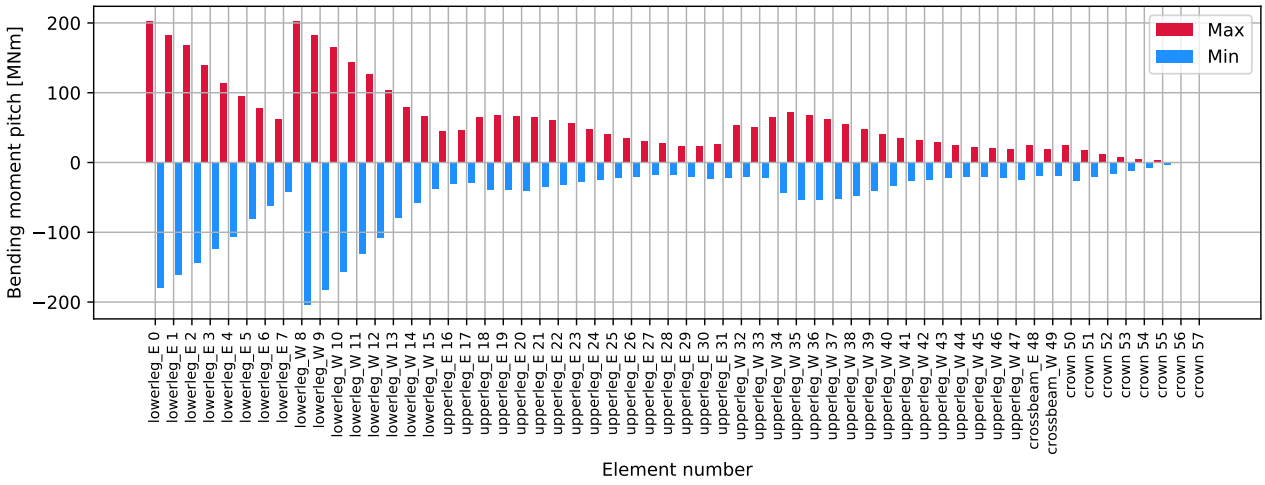

Figure 3.903: P A4 80deg - tower: Bending moment pitch [MNm]

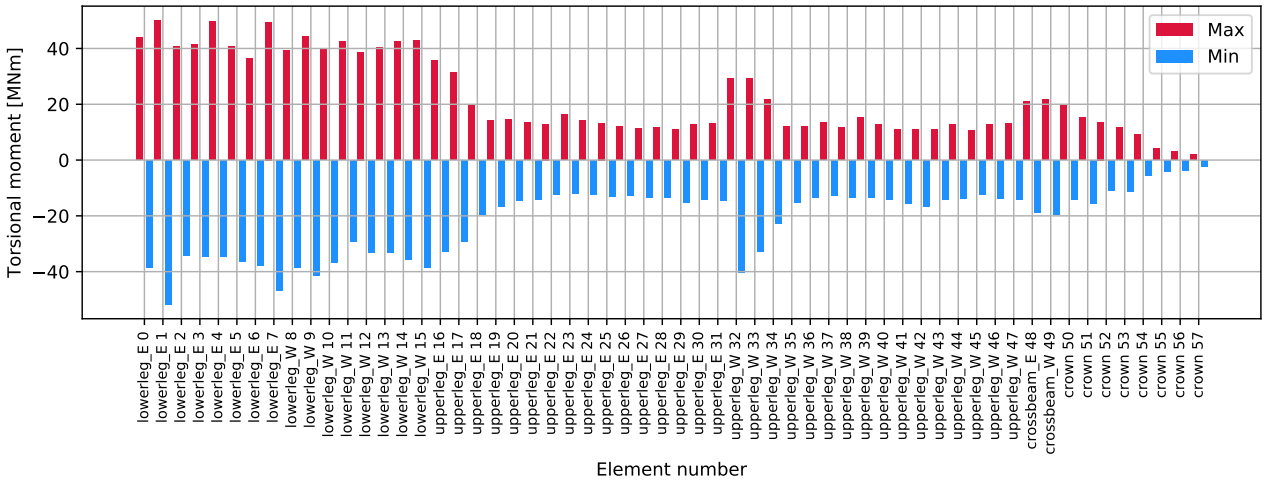

Figure 3.904: P A4 80deg - tower: Torsional moment [MNm]

3.20.3 Time series

Note : Time series are filtered using a Saviotzky-Golay filter for increased readability of the time history plots. Hence, maximum values that occur due to a rapid vibration are not shown in the plots. For maximum values, refer to the tabulated data.
All elements are numbered from South to North, bottom to top

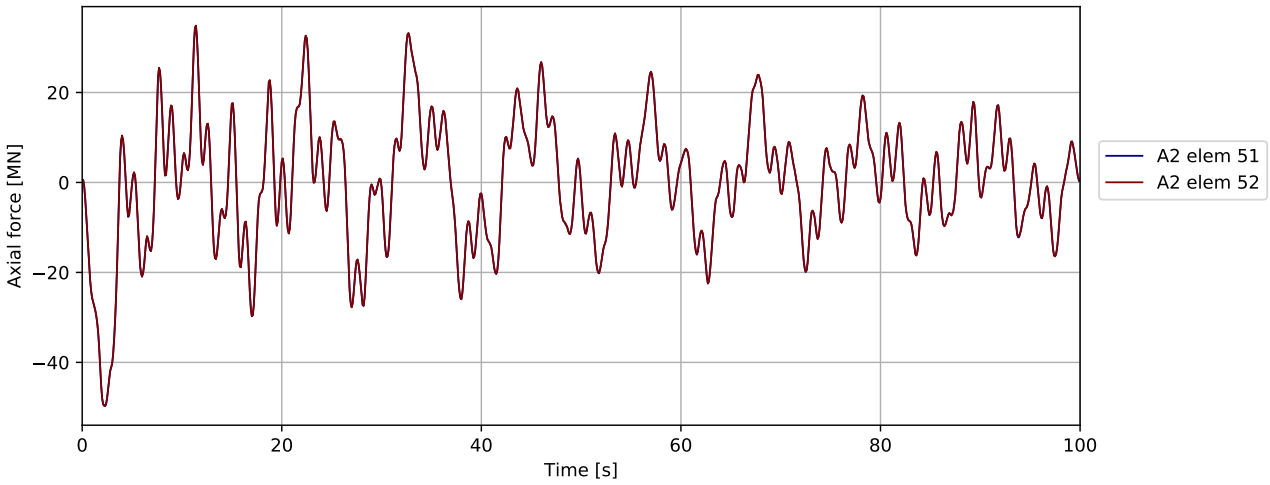

Figure 3.905: P A4 80deg - bridgegirder @ pylon: Axial force [MN]

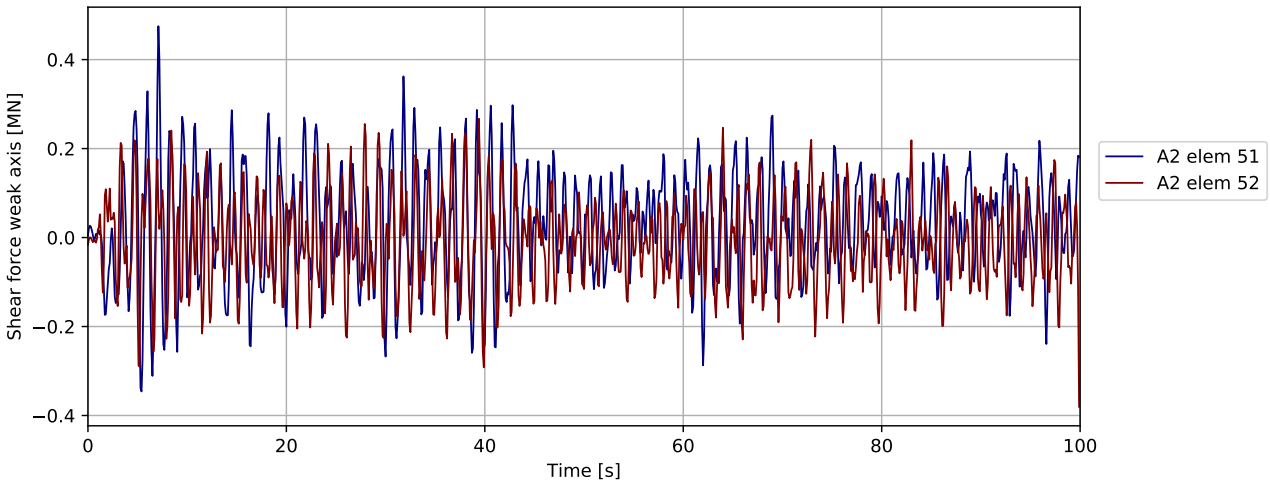

Figure 3.906: P A4 80deg - bridgegirder @ pylon: Shear force weak axis [MN]

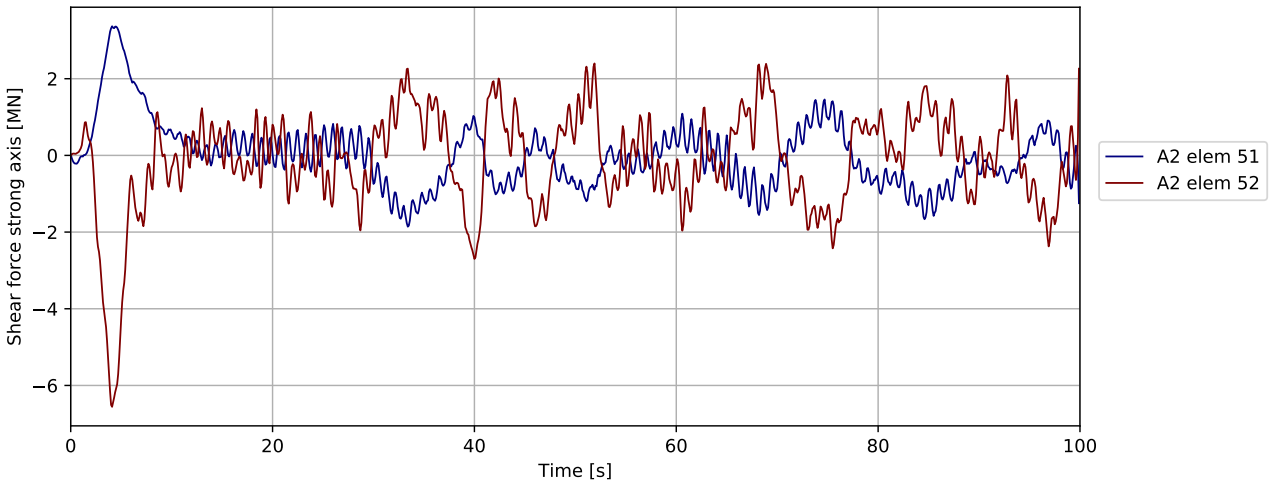

Figure 3.907: P A4 80deg - bridgegirder @ pylon: Shear force strong axis [MN]

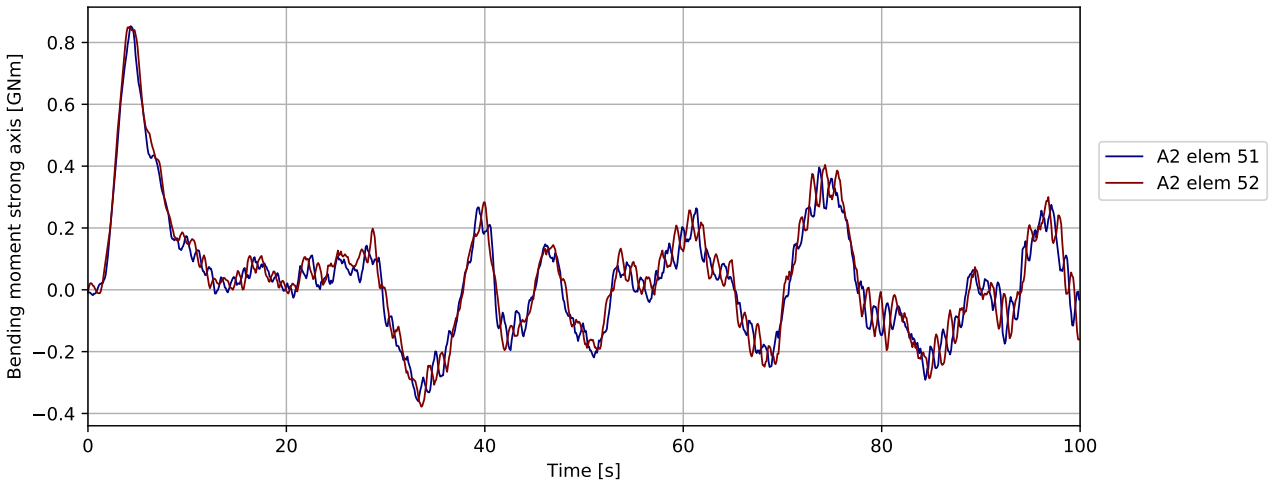

Figure 3.908: P A4 80deg - bridgegirder @ pylon: Bending moment strong axis [GNm]

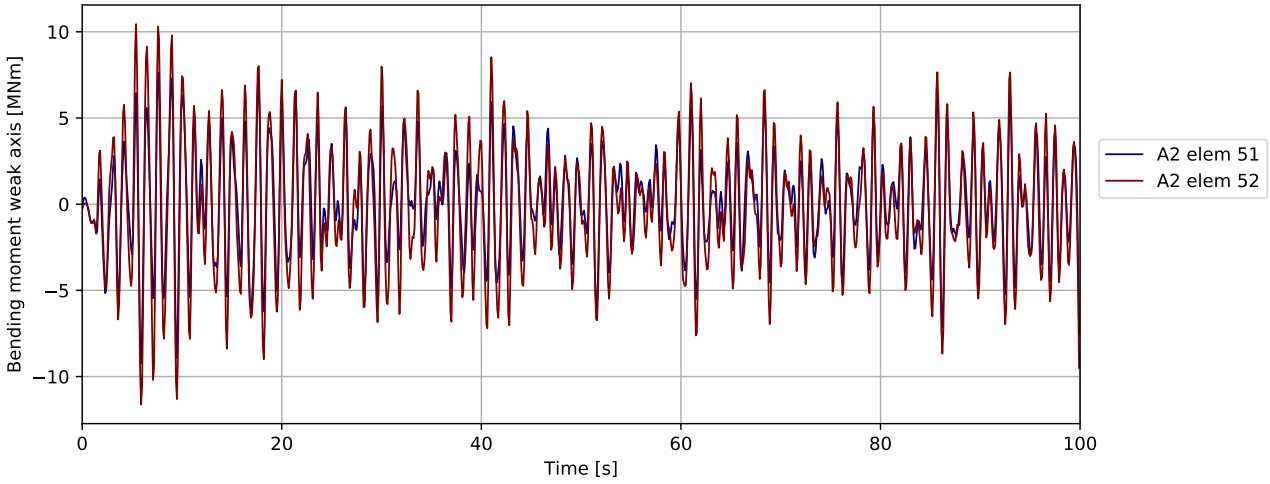

Figure 3.909: P A4 80deg - bridgegirder @ pylon: Bending moment weak axis [MNm]

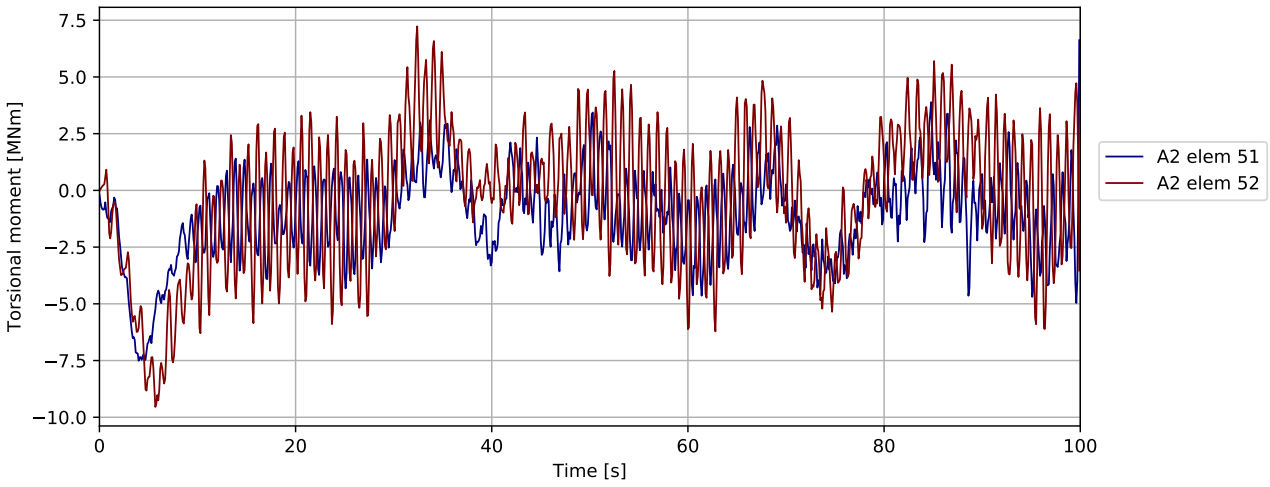

Figure 3.910: P A4 80deg - bridgegirder @ pylon: Torsional moment [MNm]

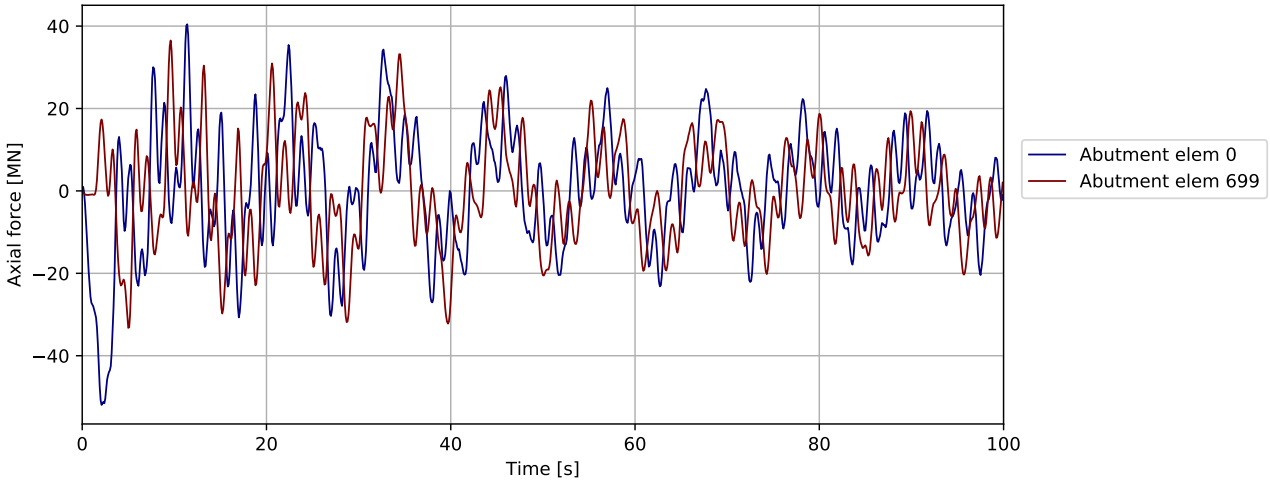

Figure 3.911: P A4 80deg - bridgegirder @abutments: Axial force [MN]

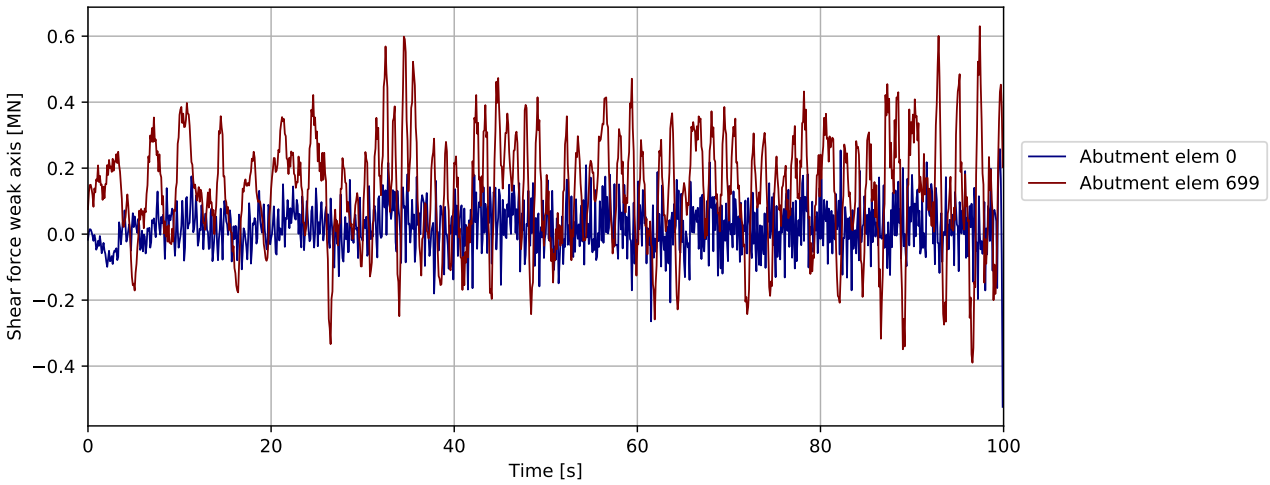

Figure 3.912: P A4 80deg - bridgegirder @abutments: Shear force weak axis [MN]

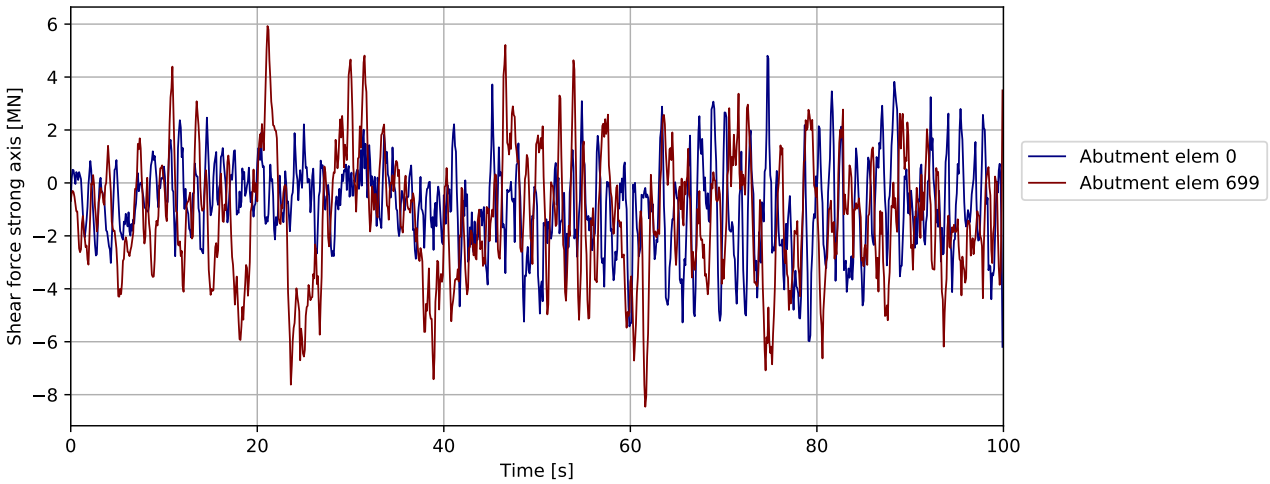

Figure 3.913: P A4 80deg - bridgegirder @abutments: Shear force strong axis [MN]

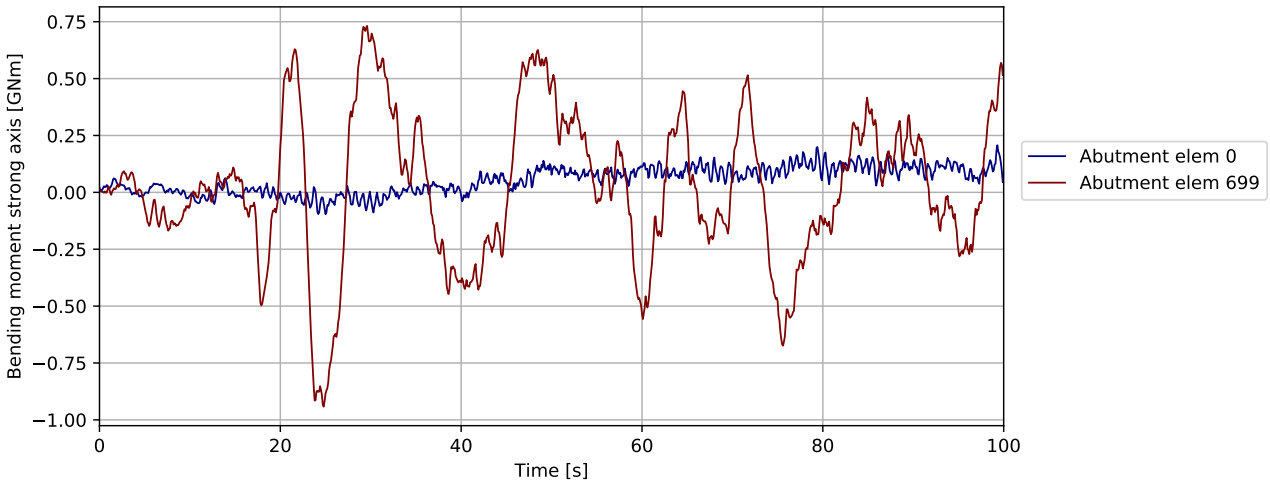

Figure 3.914: P A4 80deg - bridgegirder @abutments: Bending moment strong axis [GNm]

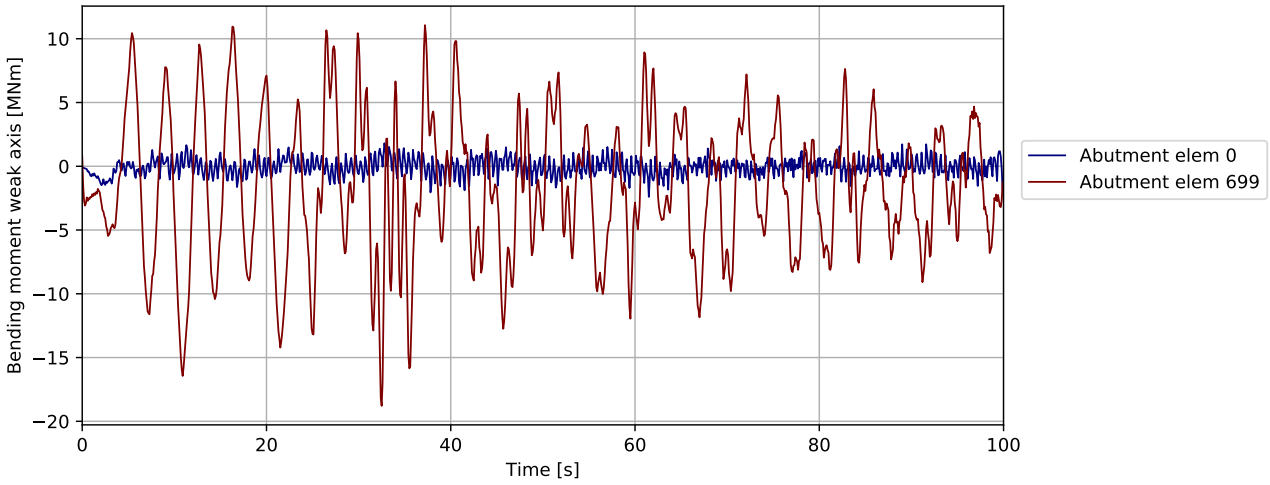

Figure 3.915: P A4 80deg - bridgegirder @abutments: Bending moment weak axis [MNm]

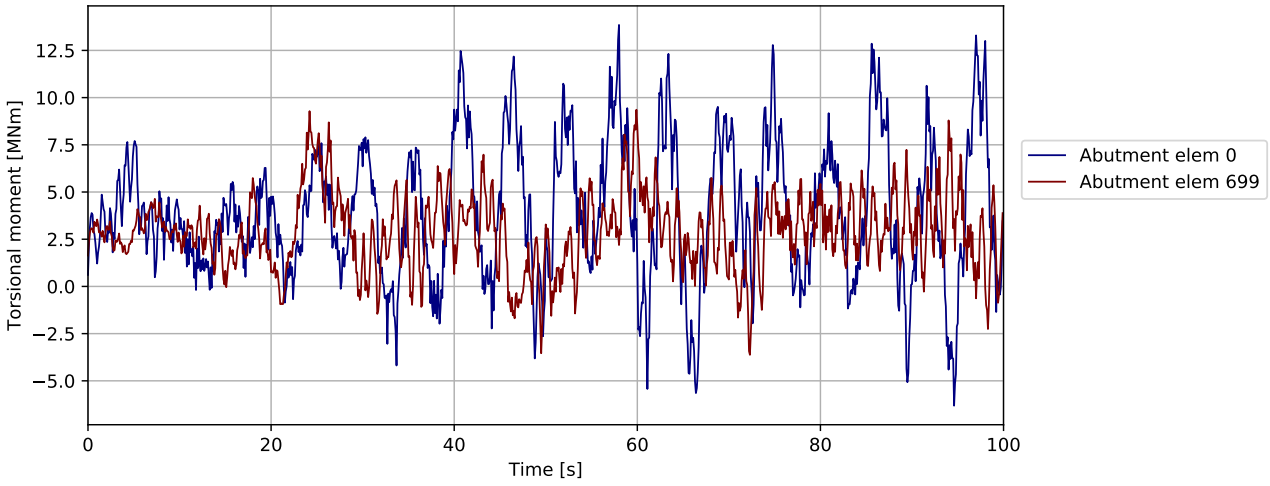

Figure 3.916: P A4 80deg - bridgegirder @abutments: Torsional moment [MNm]

Note : Compressive spring force is negative

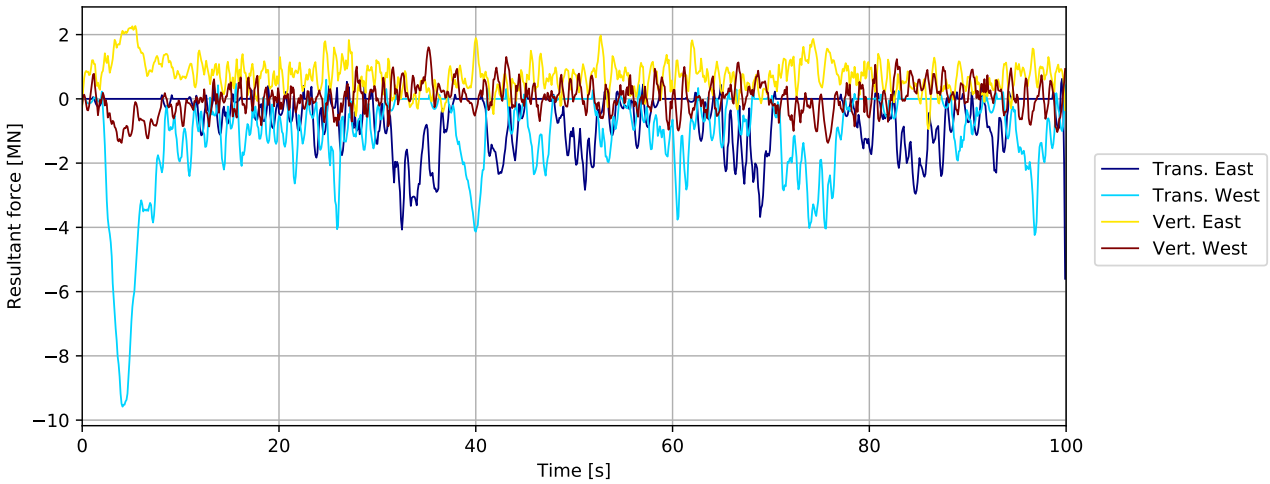

Figure 3.917: P A4 80deg - bridgegirder supports in tower: Resultant force [MN]

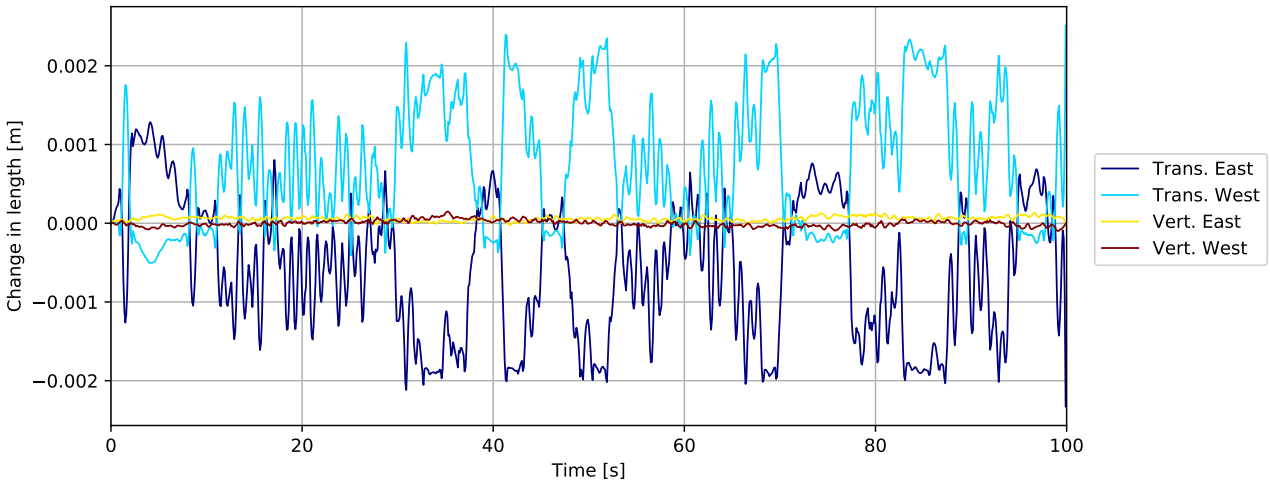

Figure 3.918: P A4 80deg - bridgegirder supports in tower: Change in length [m]

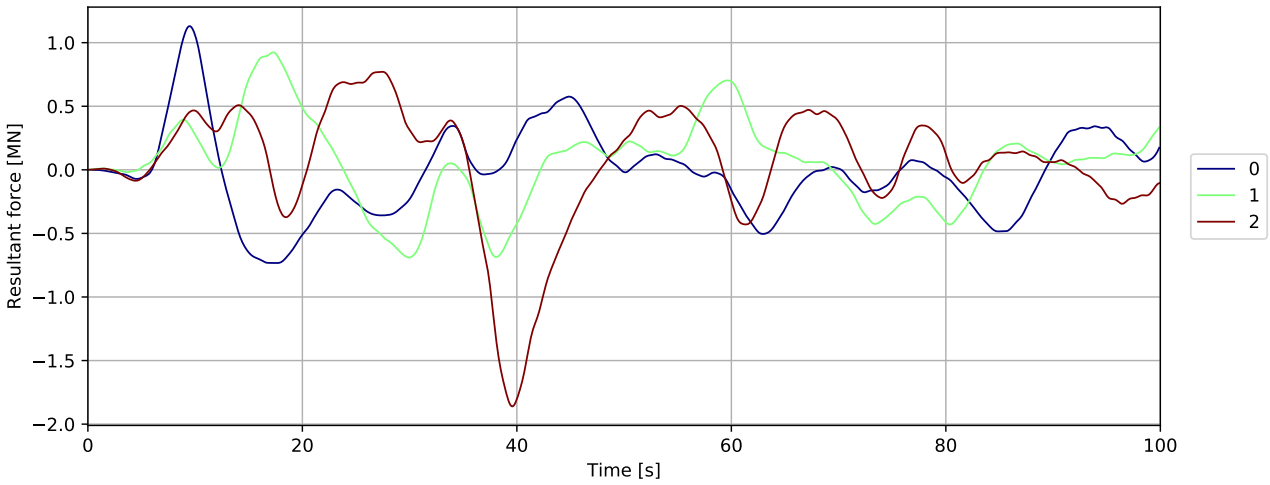

Figure 3.919: Mooring force

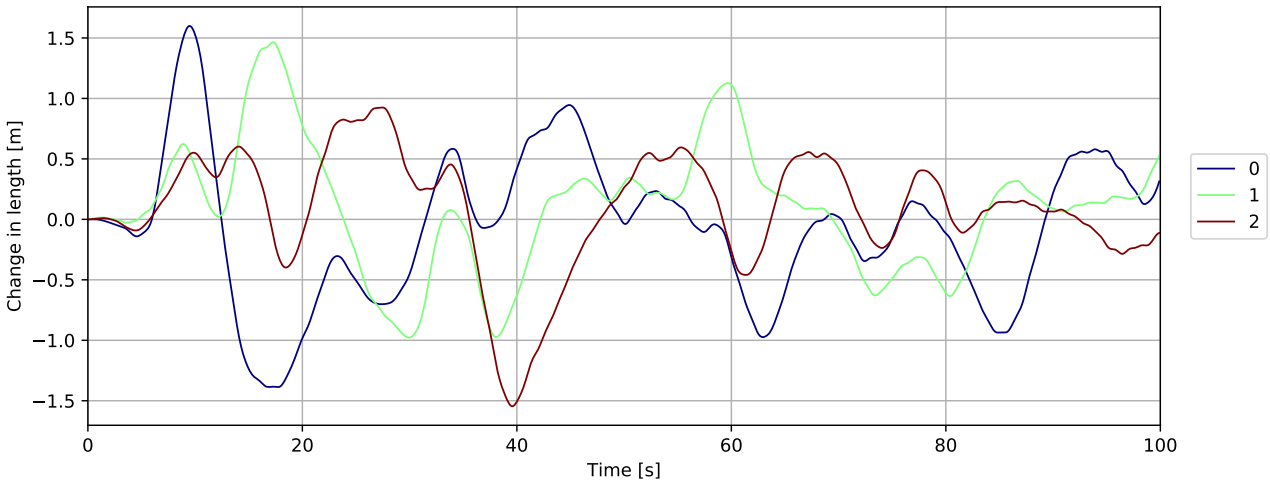

Figure 3.920: Mooring displacement

3.21 PontoonA5 80deg

3.21.1 Overall response

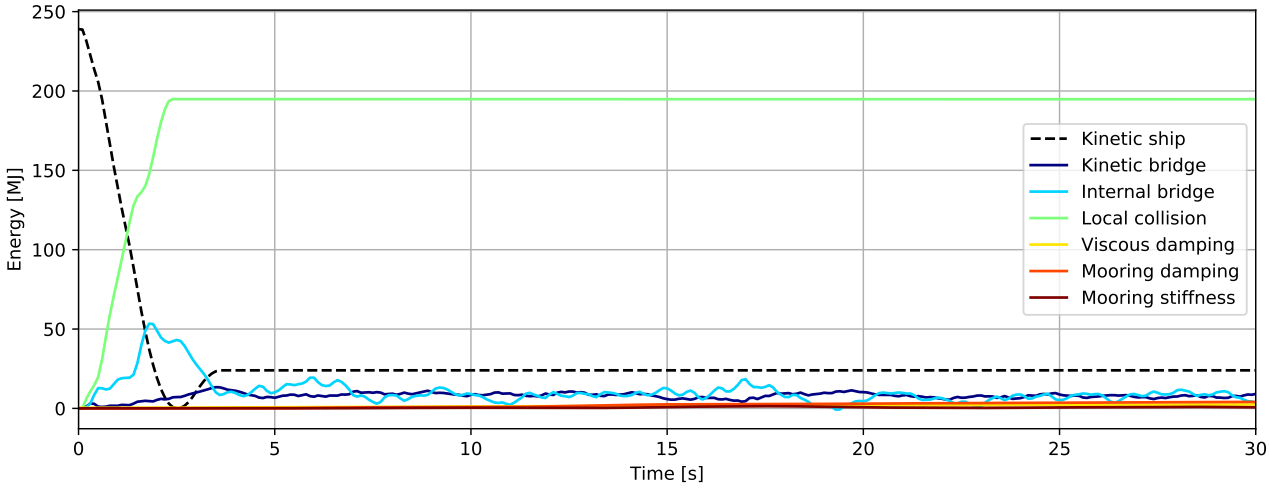

Figure 3.921: Energy [MJ] - initial phase

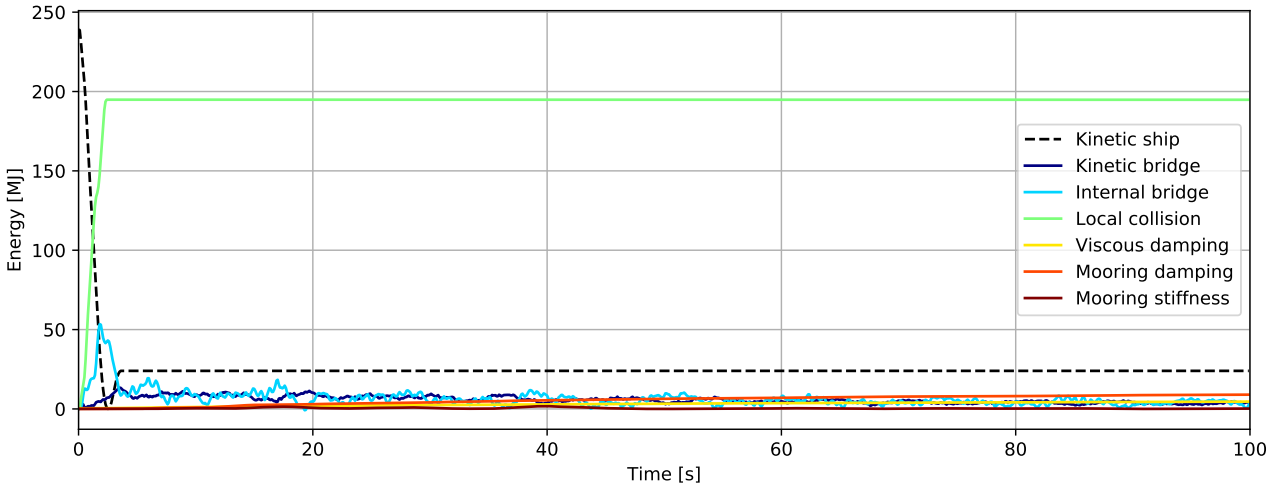

Figure 3.922: Energy [MJ]

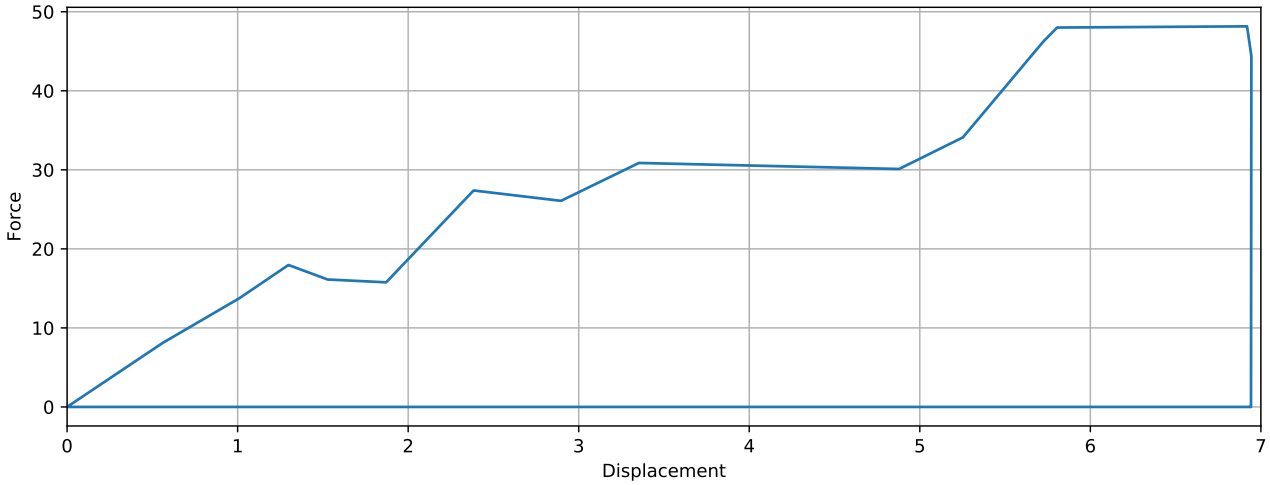

Figure 3.923: Simulated local collision force-displacement

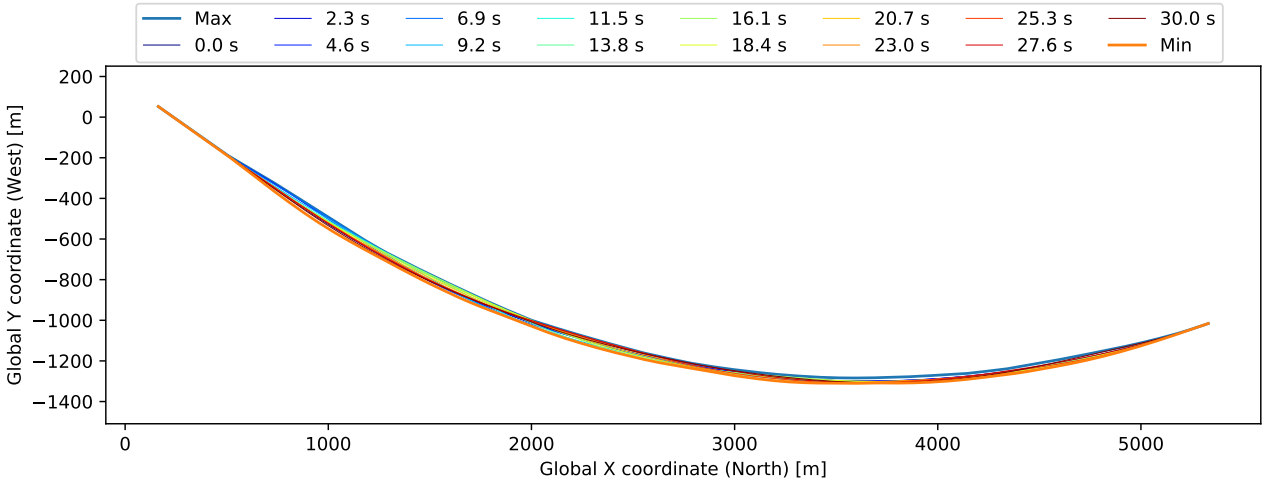

Figure 3.924: Bridgegirder deflection (10x displacment scaling)

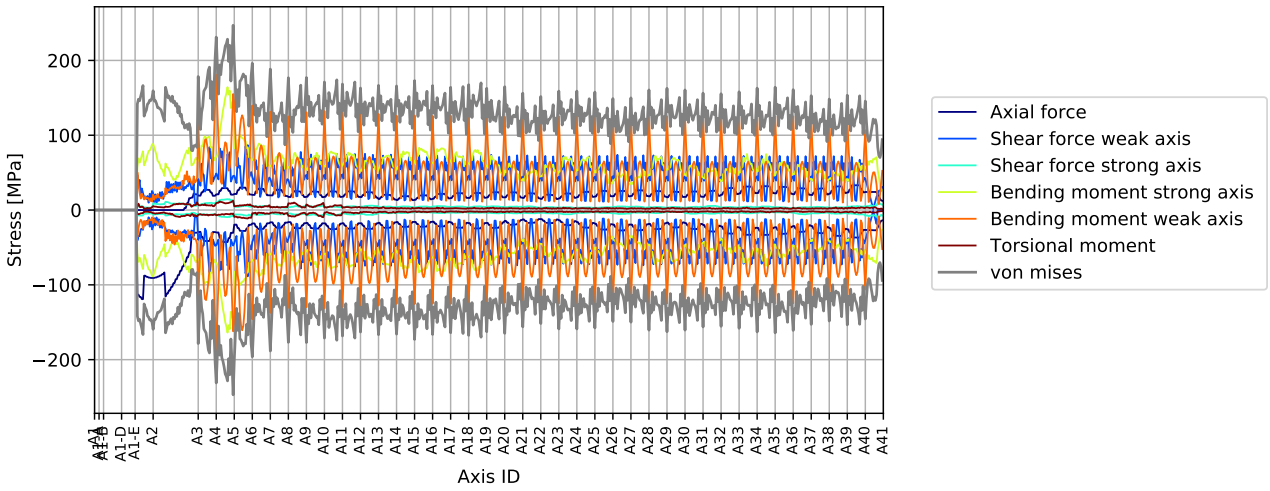

Figure 3.925: Stress envelope from all force components

3.21.2 Envelope plots

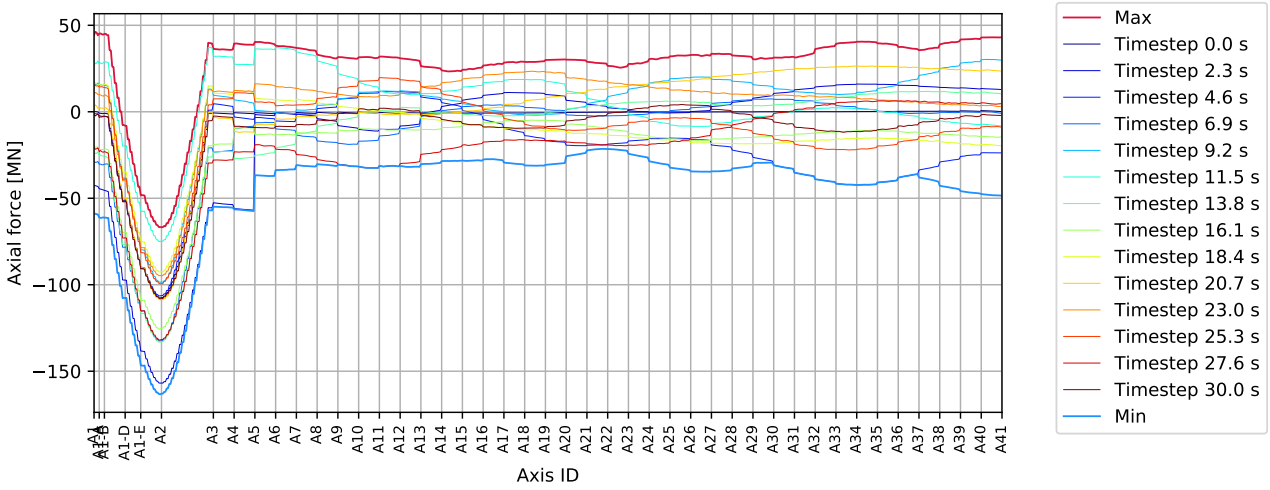

Figure 3.926: P A5 80deg - bridgegirder : Axial force [MN]

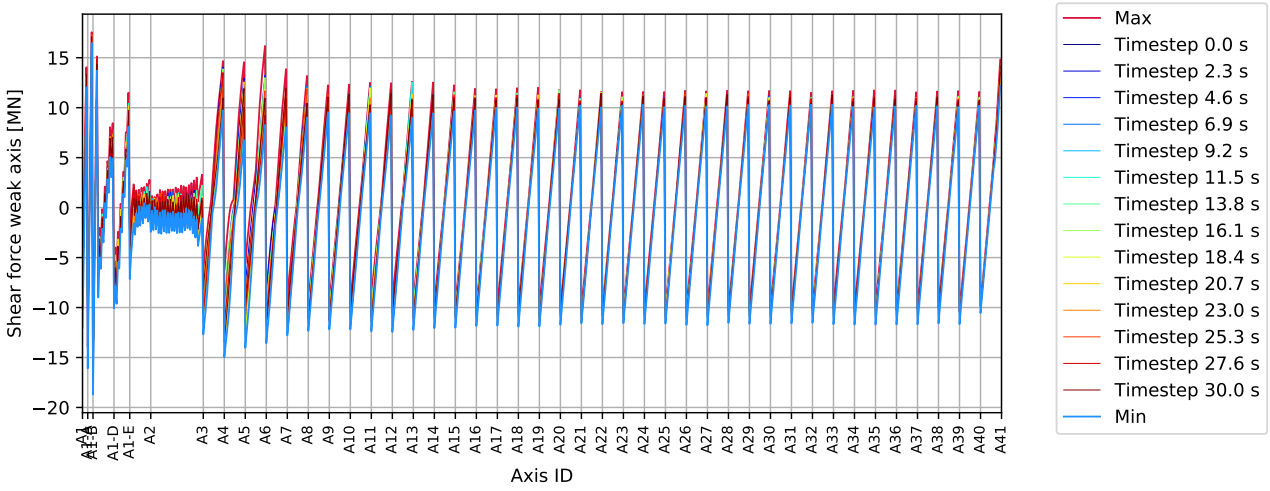

Figure 3.927: P A5 80deg - bridgegirder : Shear force weak axis [MN]

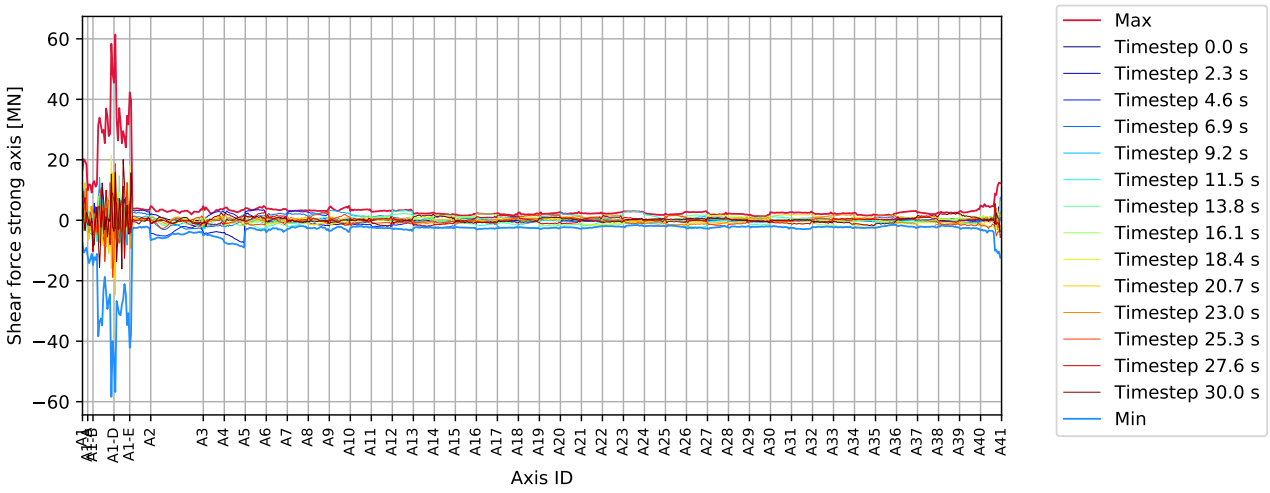

Figure 3.928: P A5 80deg - bridgegirder : Shear force strong axis [MN]

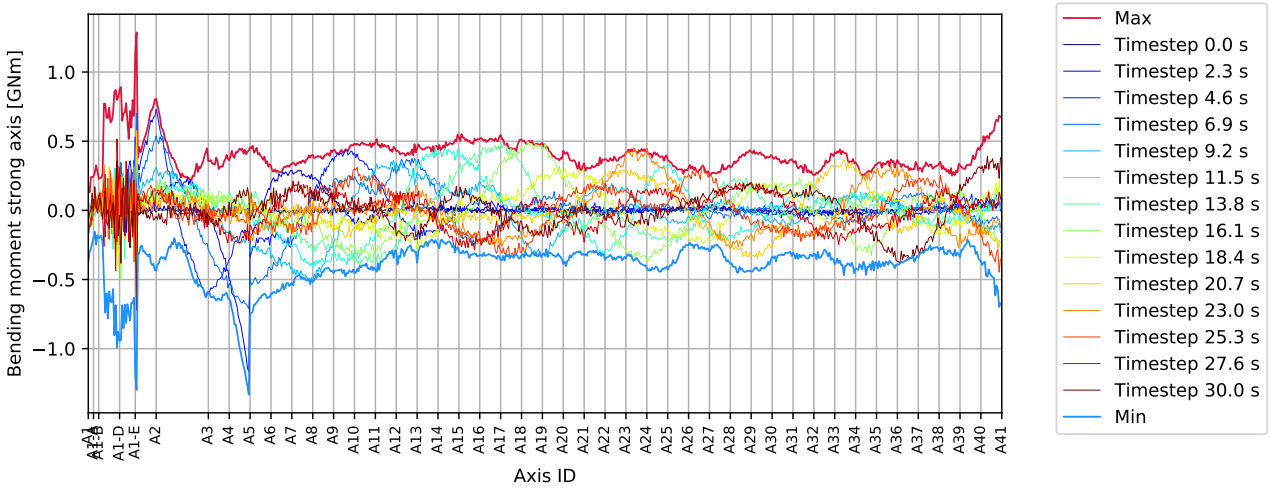

Figure 3.929: P A5 80deg - bridgegirder : Bending moment strong axis [GNm]

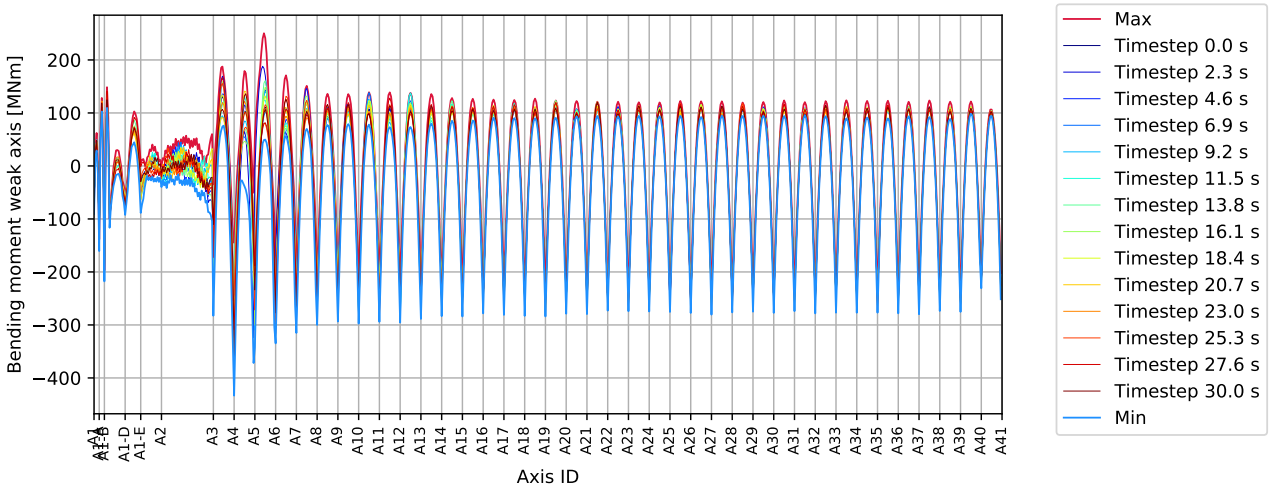

Figure 3.930: P A5 80deg - bridgegirder : Bending moment weak axis [MNm]

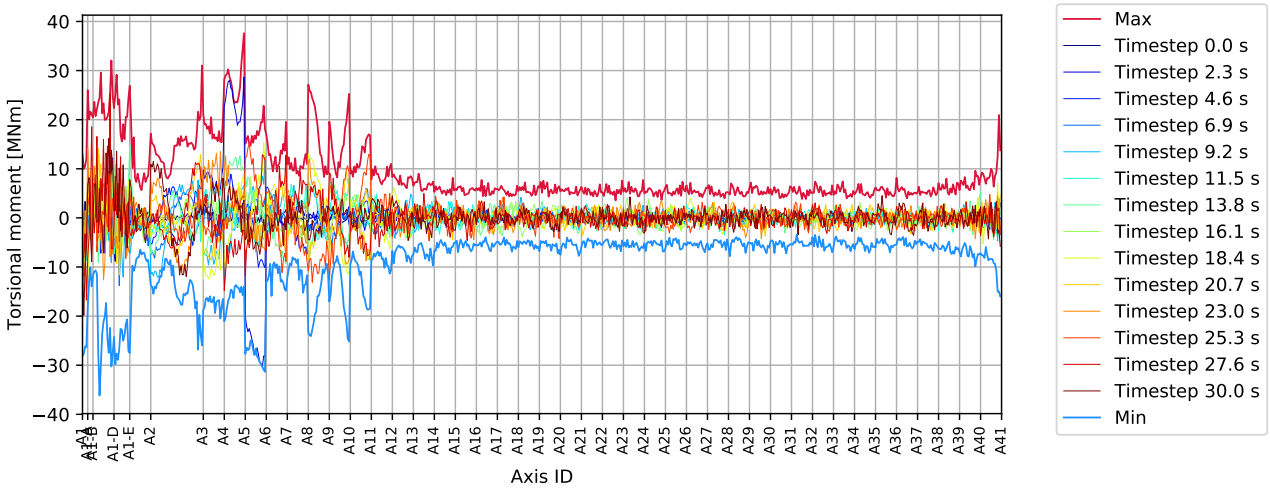

Figure 3.931: P A5 80deg - bridgegirder : Torsional moment [MNm]

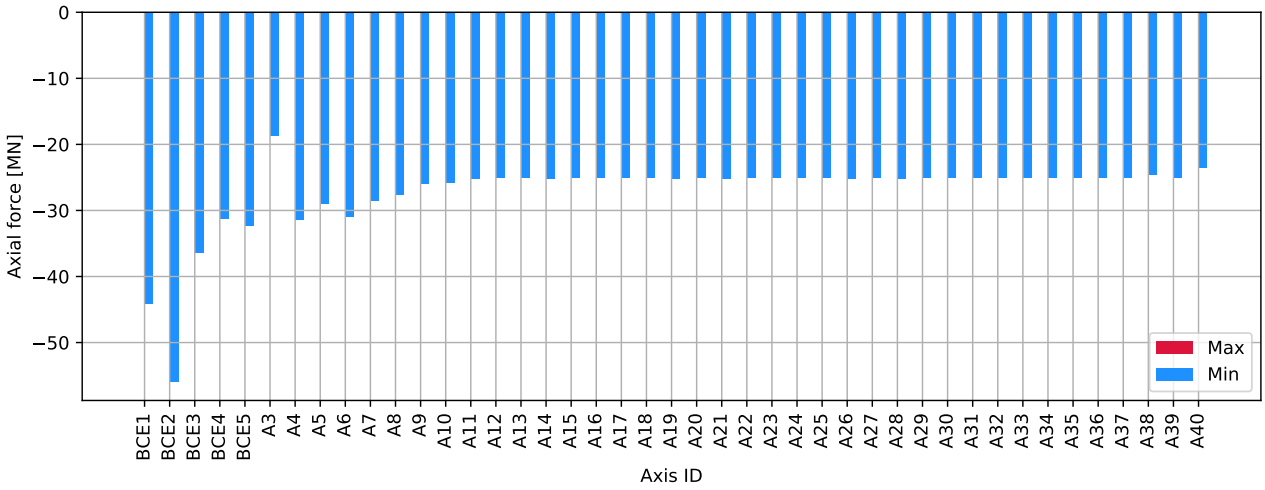

Figure 3.932: P A5 80deg - columns bottom : Axial force [MN]

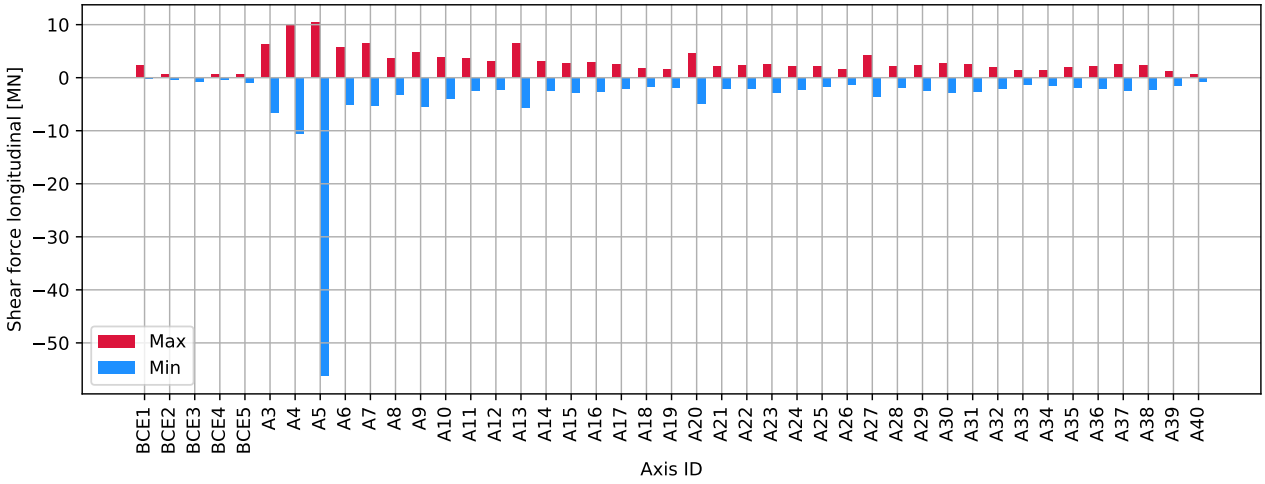

Figure 3.933: P A5 80deg - columns bottom : Shear force longitudinal [MN]

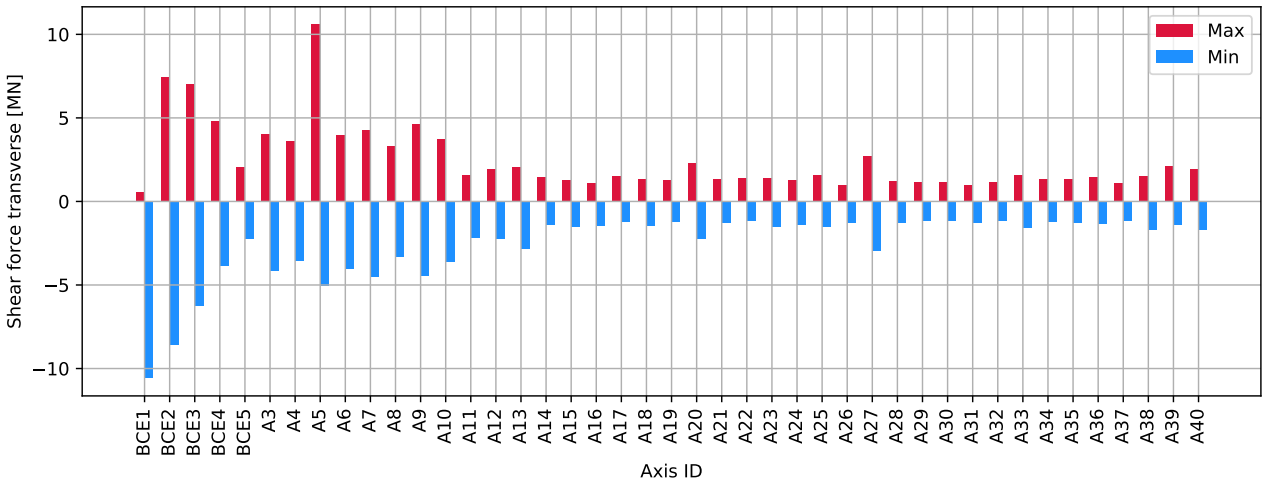

Figure 3.934: P A5 80deg - columns bottom : Shear force transverse [MN]

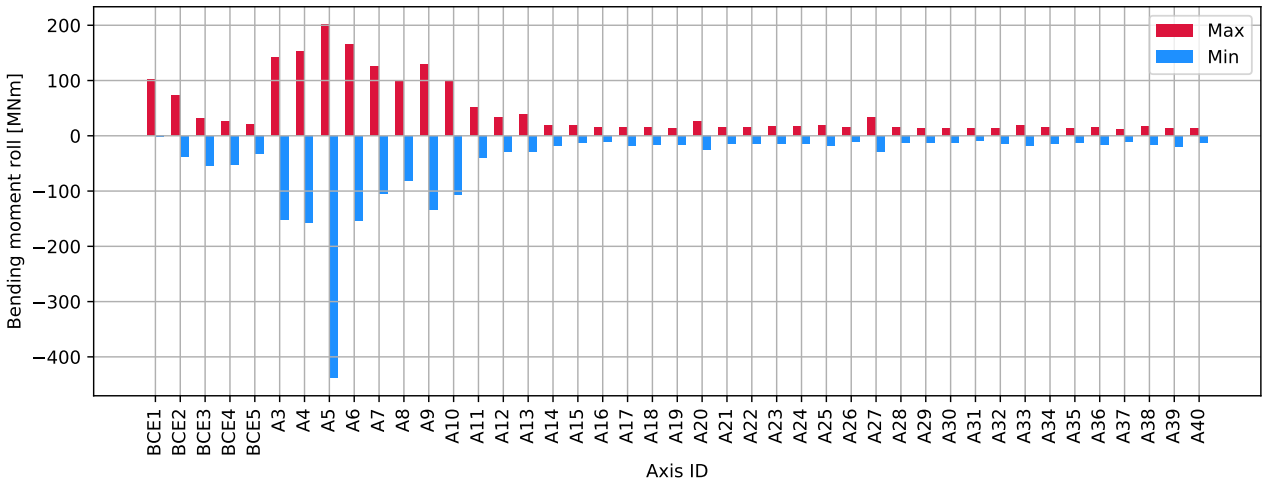

Figure 3.935: P A5 80deg - columns bottom : Bending moment roll [MNm]

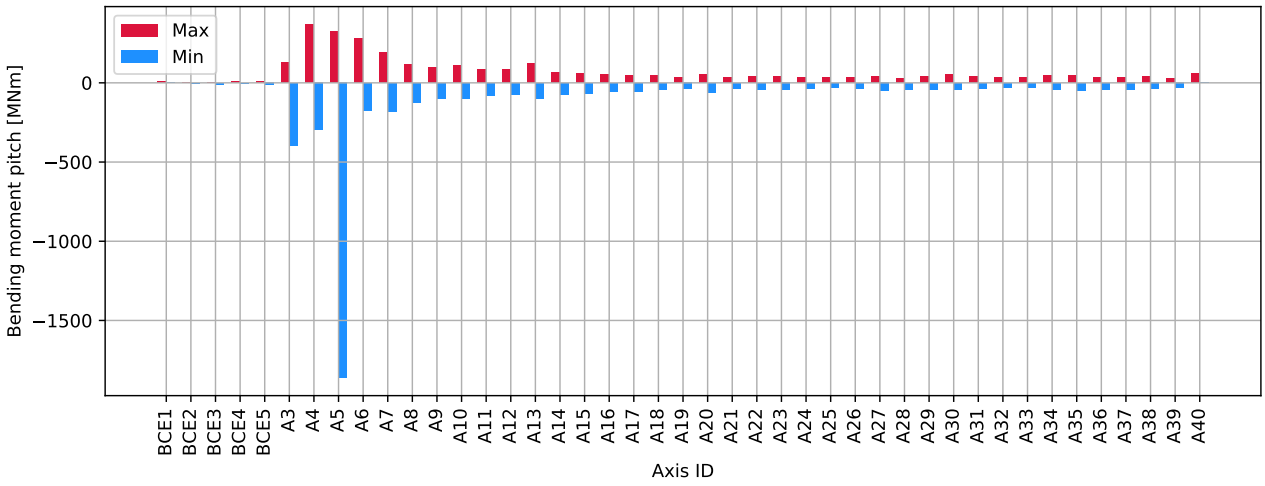

Figure 3.936: P A5 80deg - columns bottom : Bending moment pitch [MNm]

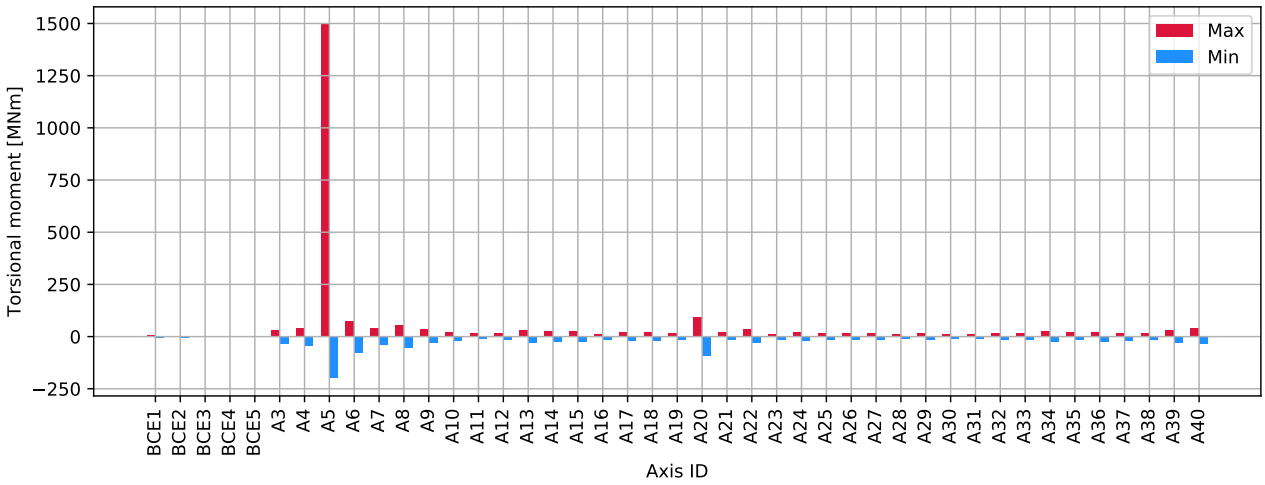

Figure 3.937: P A5 80deg - columns bottom : Torsional moment [MNm]

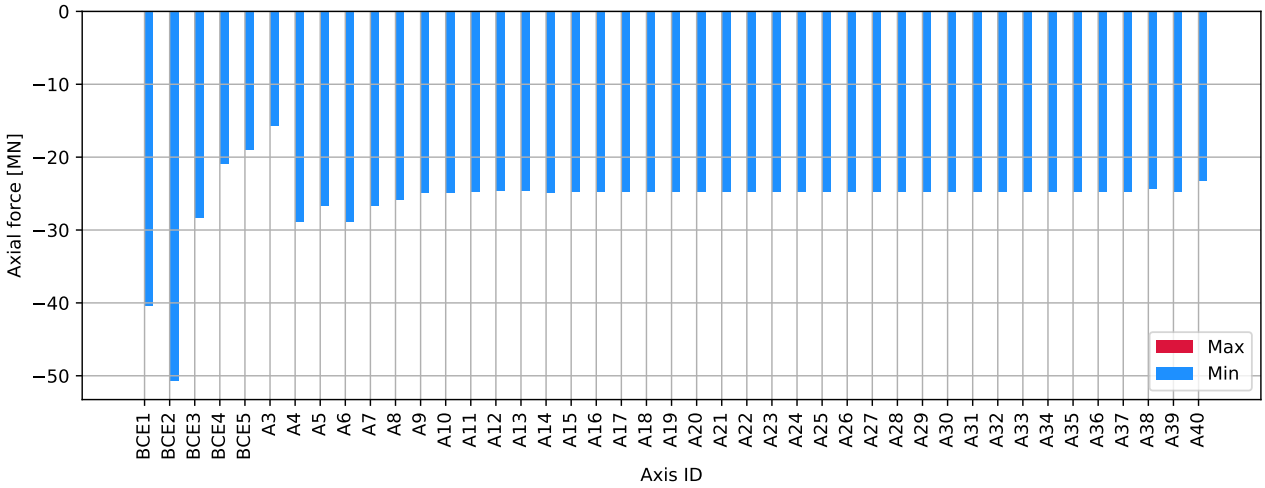

Figure 3.938: P A5 80deg - columns top : Axial force [MN]

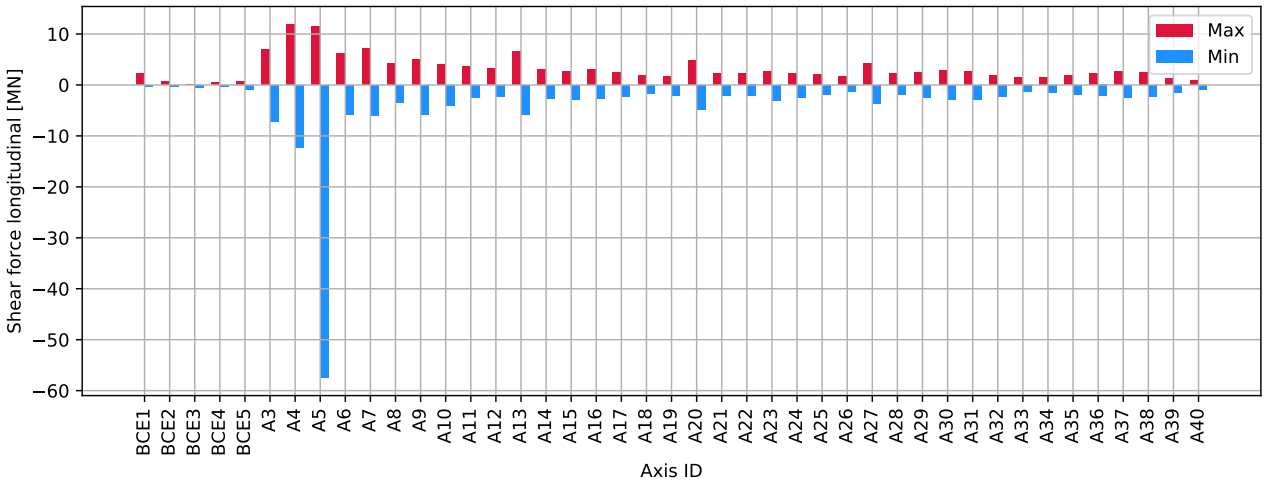

Figure 3.939: P A5 80deg - columns top : Shear force longitudinal [MN]

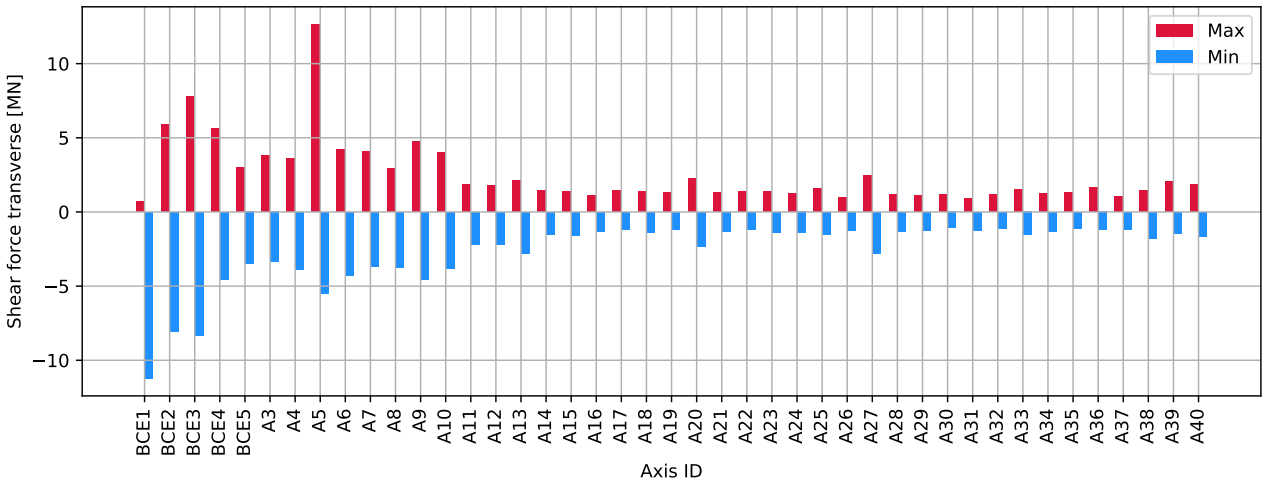

Figure 3.940: P A5 80deg - columns top : Shear force transverse [MN]

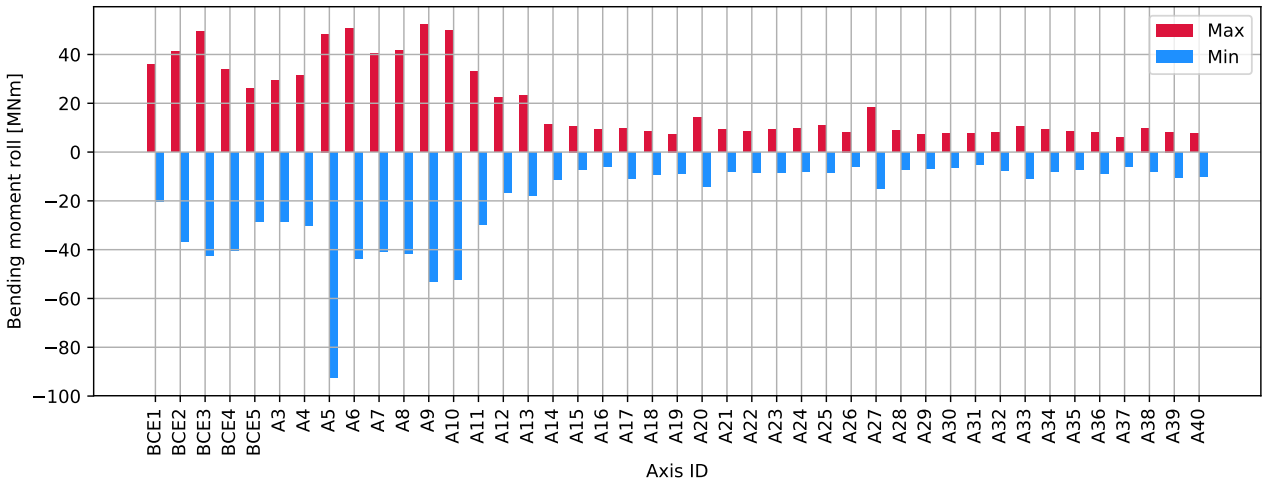

Figure 3.941: P A5 80deg - columns top : Bending moment roll [MNm]

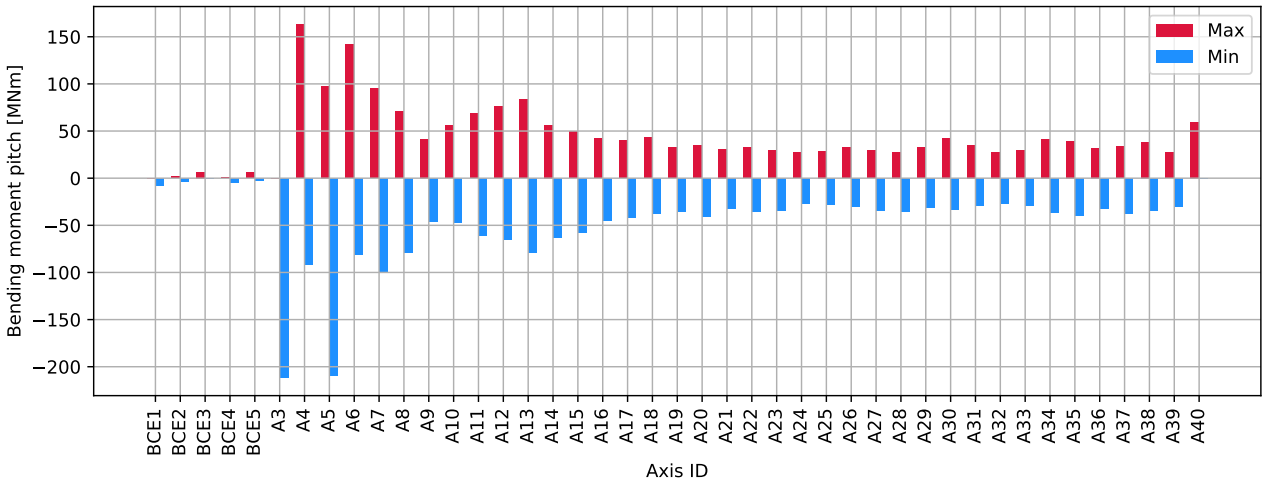

Figure 3.942: P A5 80deg - columns top : Bending moment pitch [MNm]

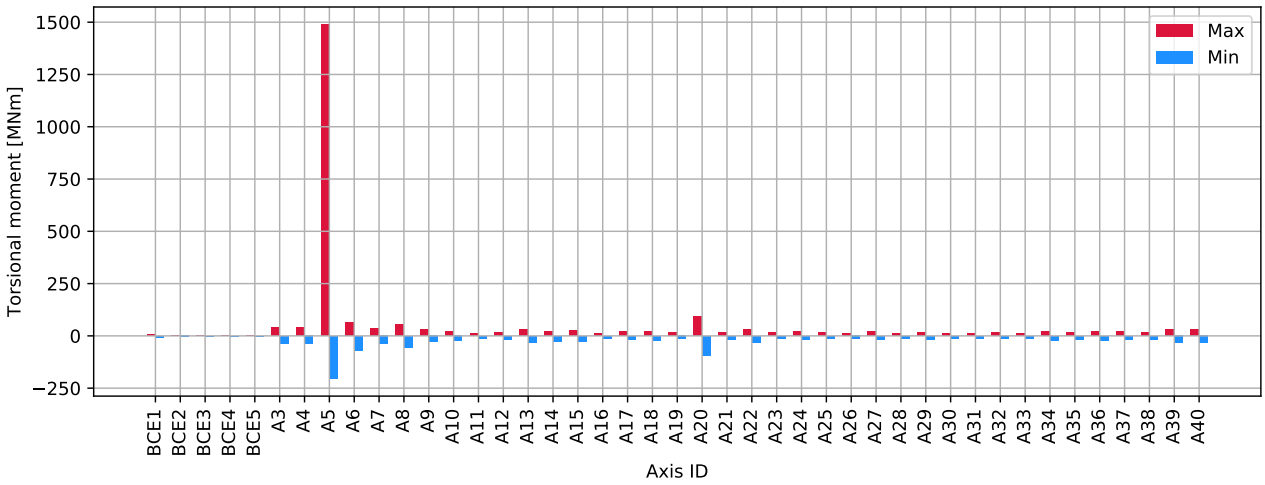

Figure 3.943: P A5 80deg - columns top : Torsional moment [MNm]

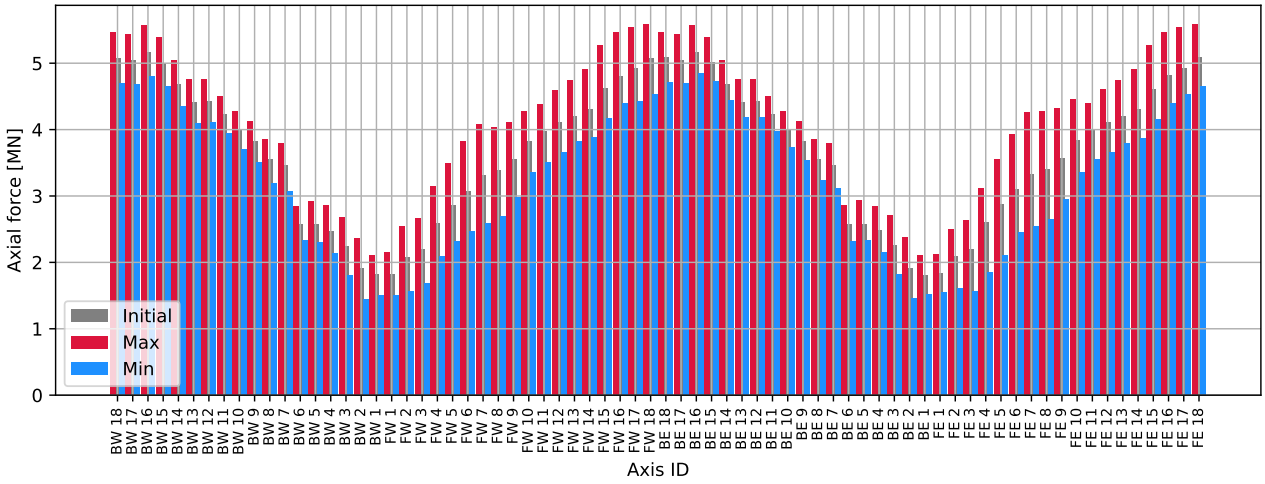

Figure 3.944: P A5 80deg - cables : Axial force [MN]

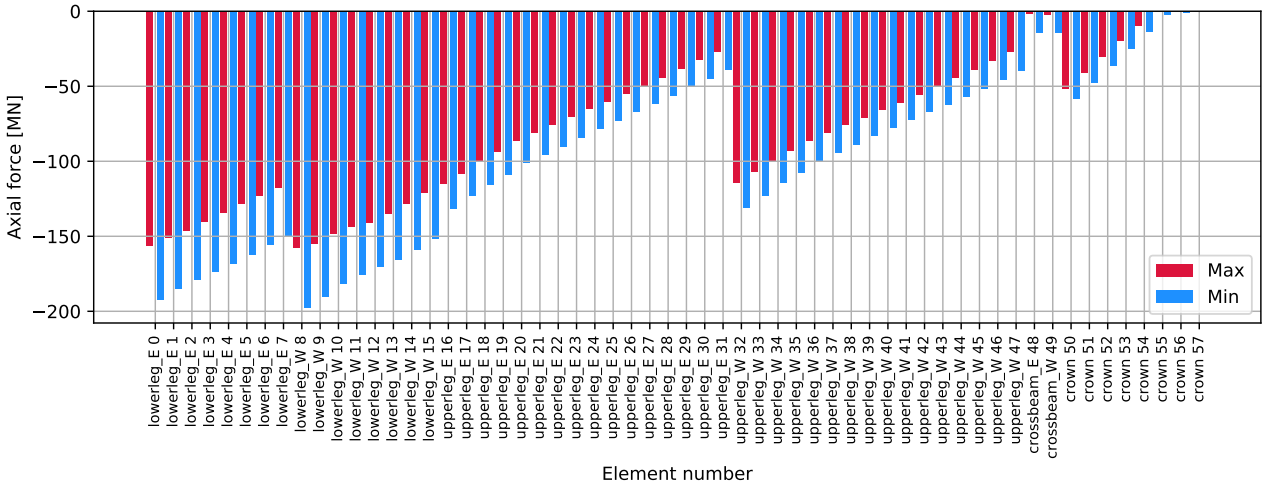

Figure 3.945: P A5 80deg - tower: Axial force [MN]

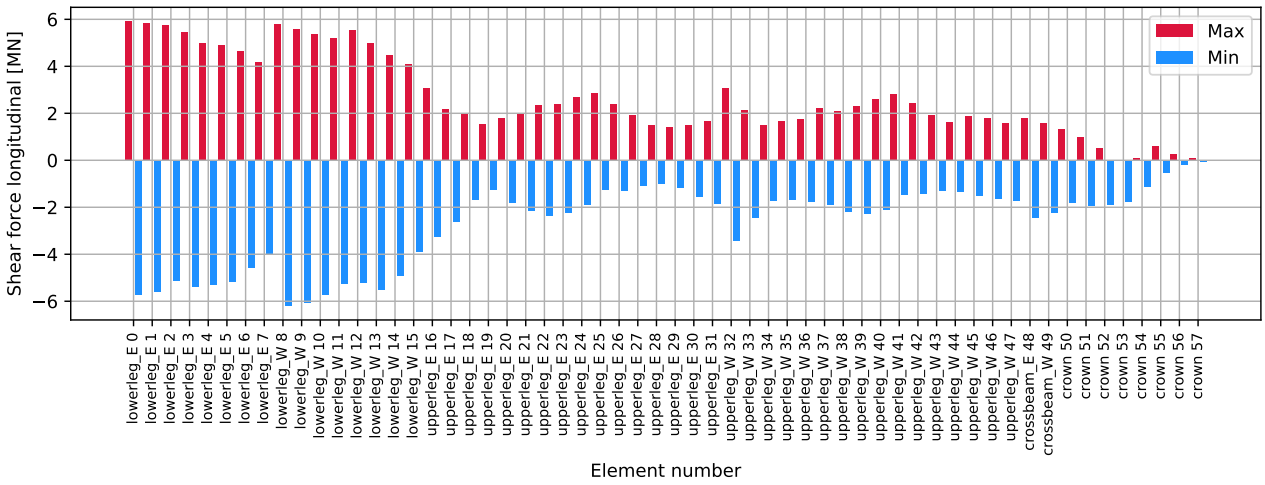

Figure 3.946: P A5 80deg - tower: Shear force longitudinal [MN]

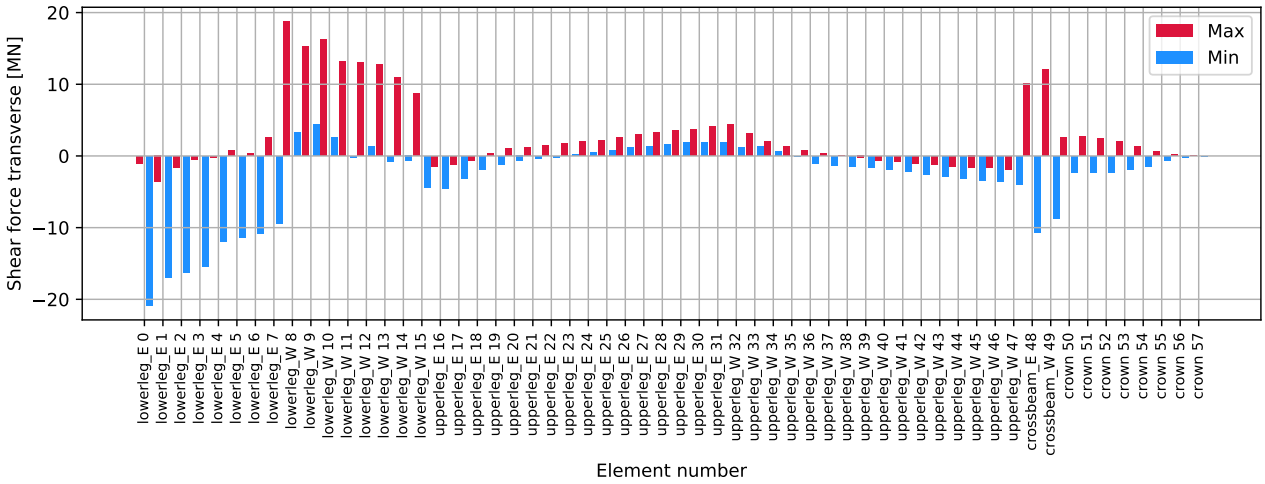

Figure 3.947: P A5 80deg - tower: Shear force transverse [MN]

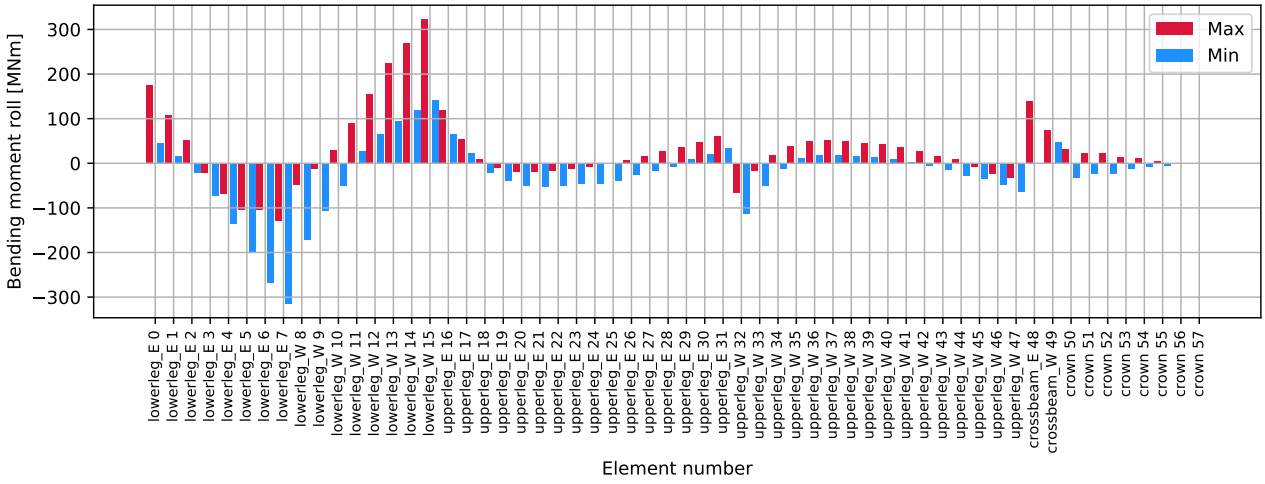

Figure 3.948: P A5 80deg - tower: Bending moment roll [MNm]

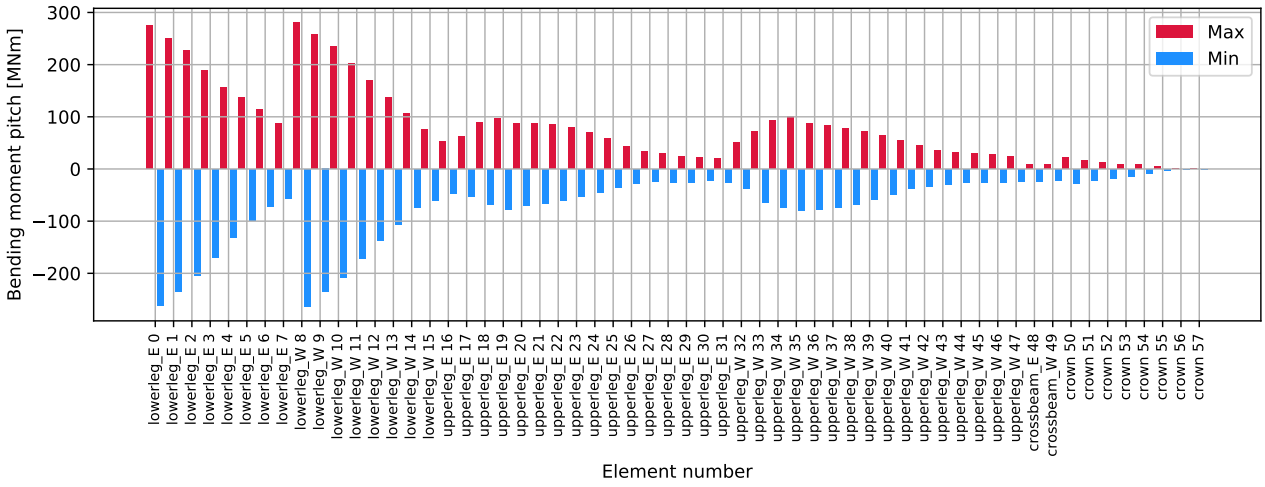

Figure 3.949: P A5 80deg - tower: Bending moment pitch [MNm]

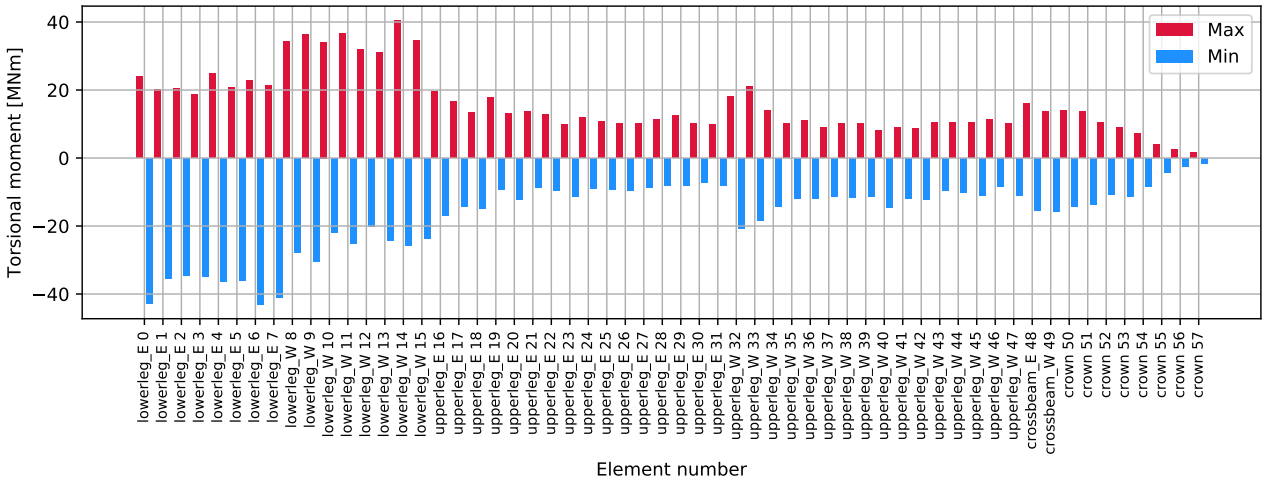

Figure 3.950: P A5 80deg - tower: Torsional moment [MNm]

3.21.3 Time series

Note : Time series are filtered using a Saviotzky-Golay filter for increased readability of the time history plots. Hence, maximum values that occur due to a rapid vibration are not shown in the plots. For maximum values, refer to the tabulated data.
All elements are numbered from South to North, bottom to top

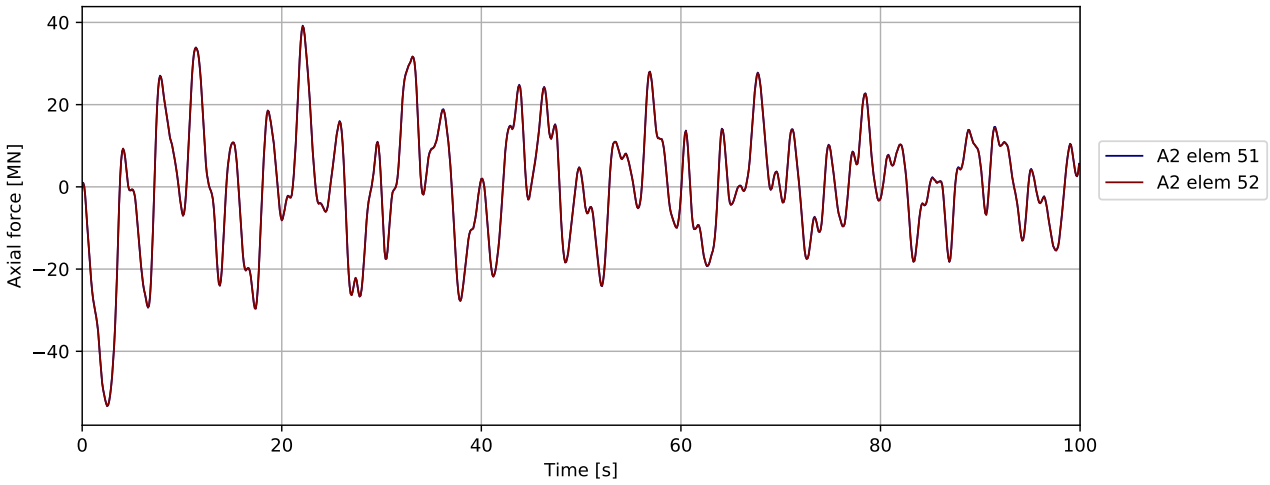

Figure 3.951: P A5 80deg - bridgegirder @ pylon: Axial force [MN]

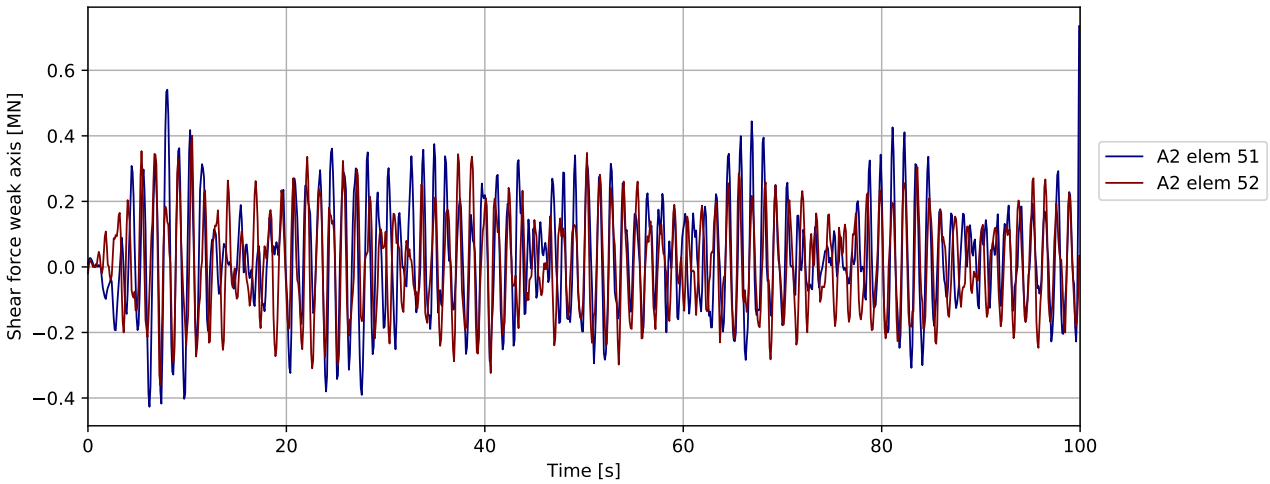

Figure 3.952: P A5 80deg - bridgegirder @ pylon: Shear force weak axis [MN]

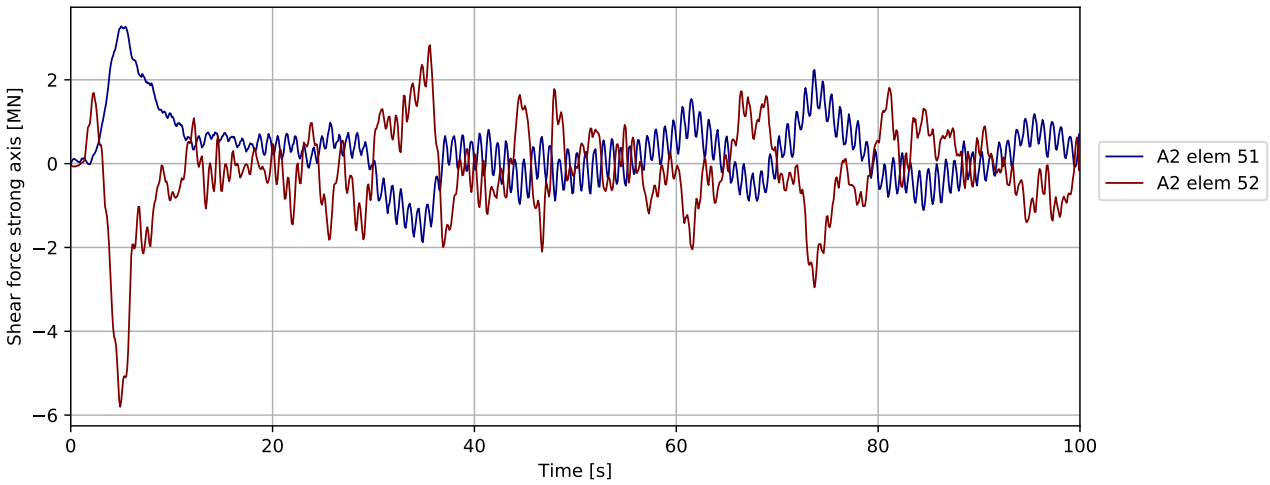

Figure 3.953: P A5 80deg - bridgegirder @ pylon: Shear force strong axis [MN]

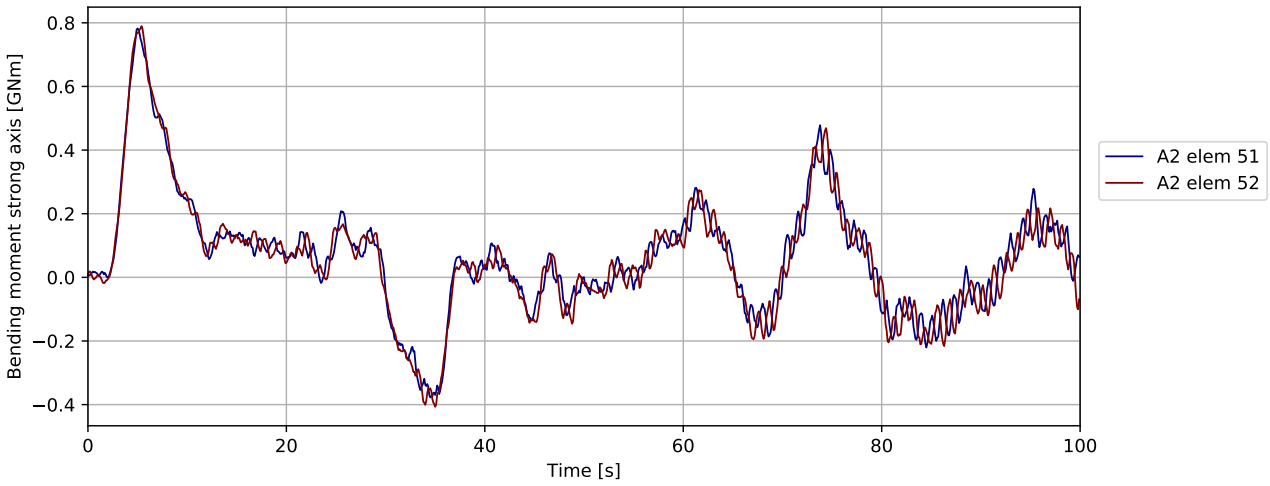

Figure 3.954: P A5 80deg - bridgegirder @ pylon: Bending moment strong axis [GNm]

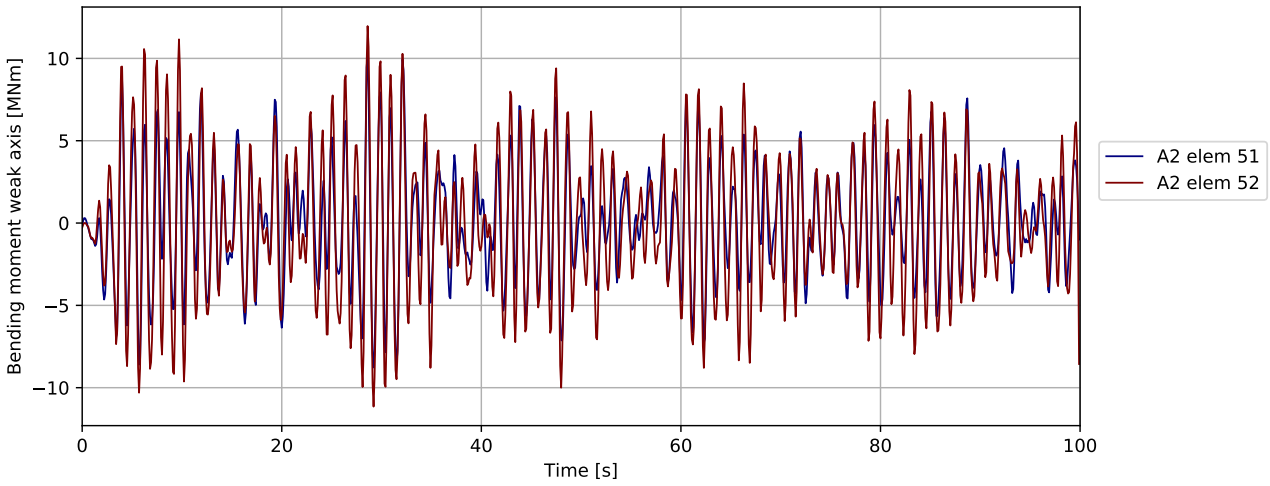

Figure 3.955: P A5 80deg - bridgegirder @ pylon: Bending moment weak axis [MNm]

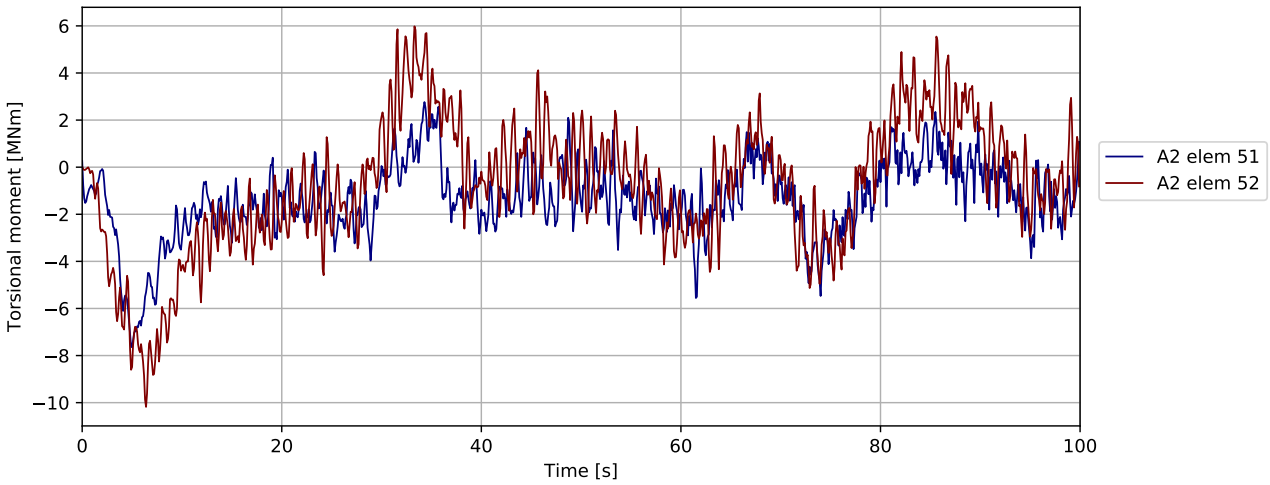

Figure 3.956: P A5 80deg - bridgegirder @ pylon: Torsional moment [MNm]

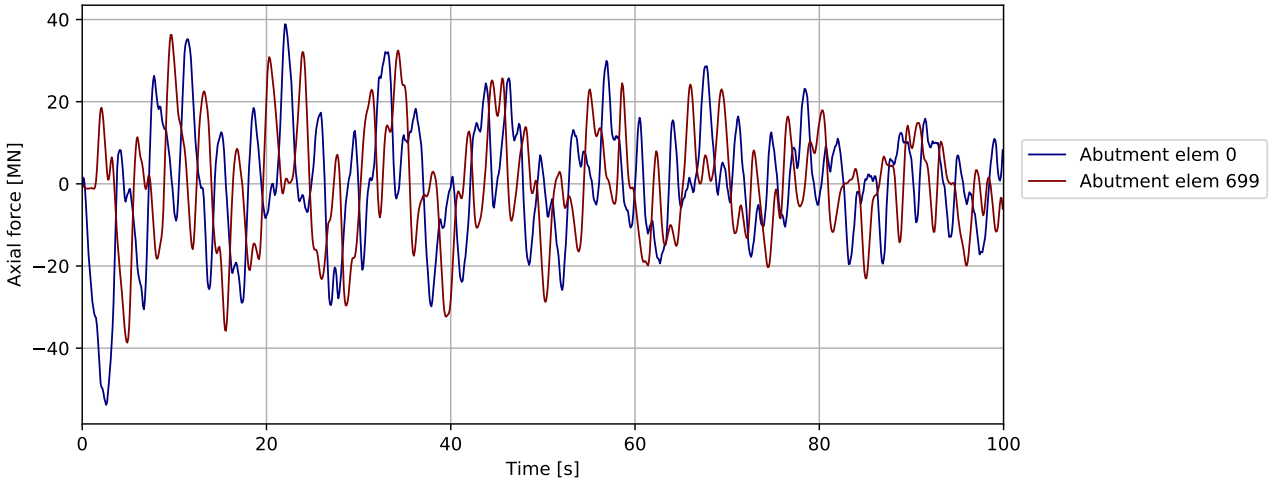

Figure 3.957: P A5 80deg - bridgegirder @abutments: Axial force [MN]

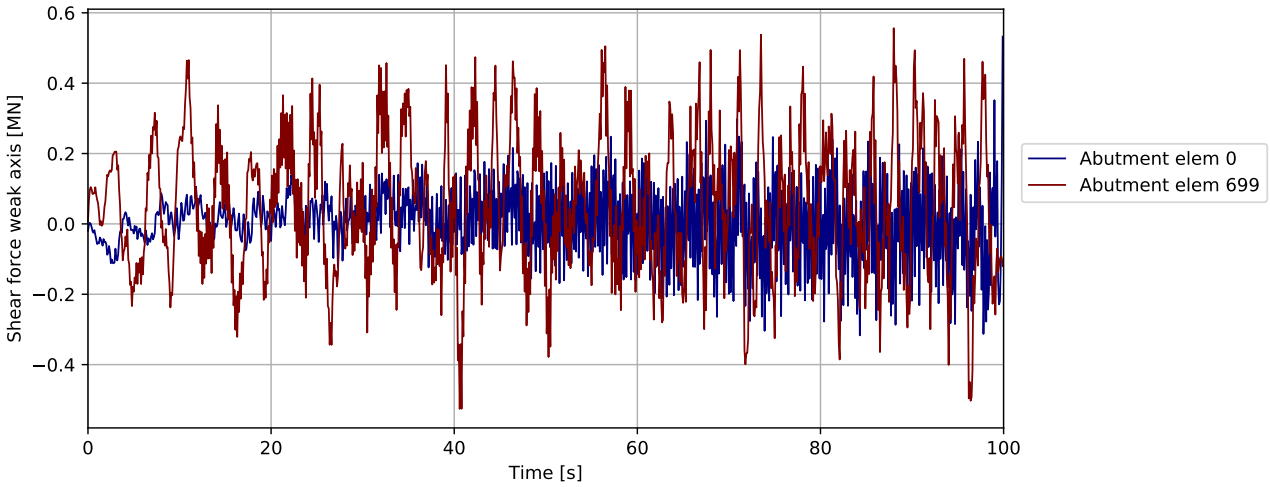

Figure 3.958: P A5 80deg - bridgegirder @abutments: Shear force weak axis [MN]

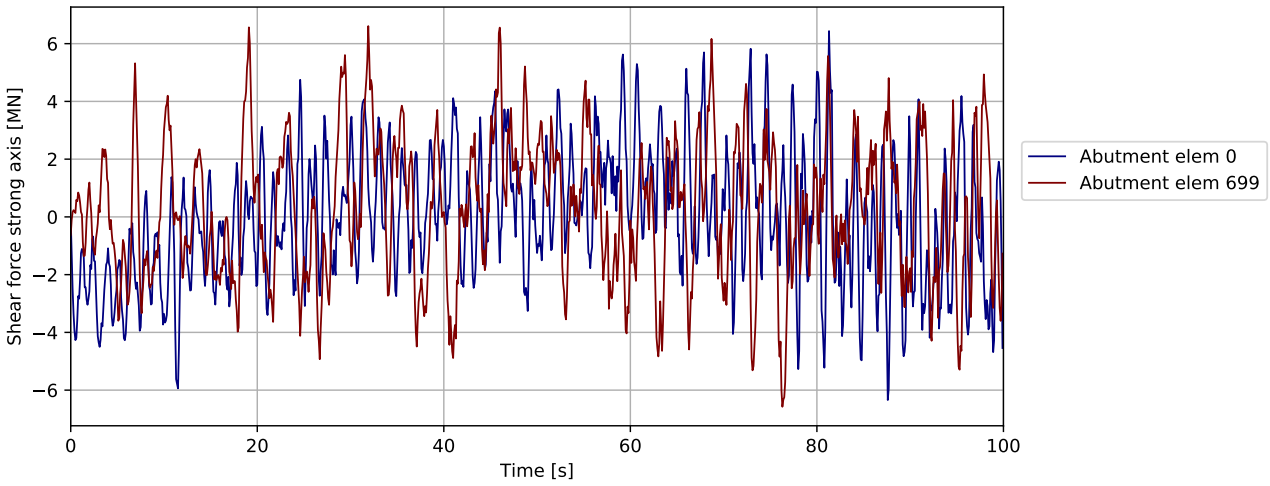

Figure 3.959: P A5 80deg - bridgegirder @abutments: Shear force strong axis [MN]

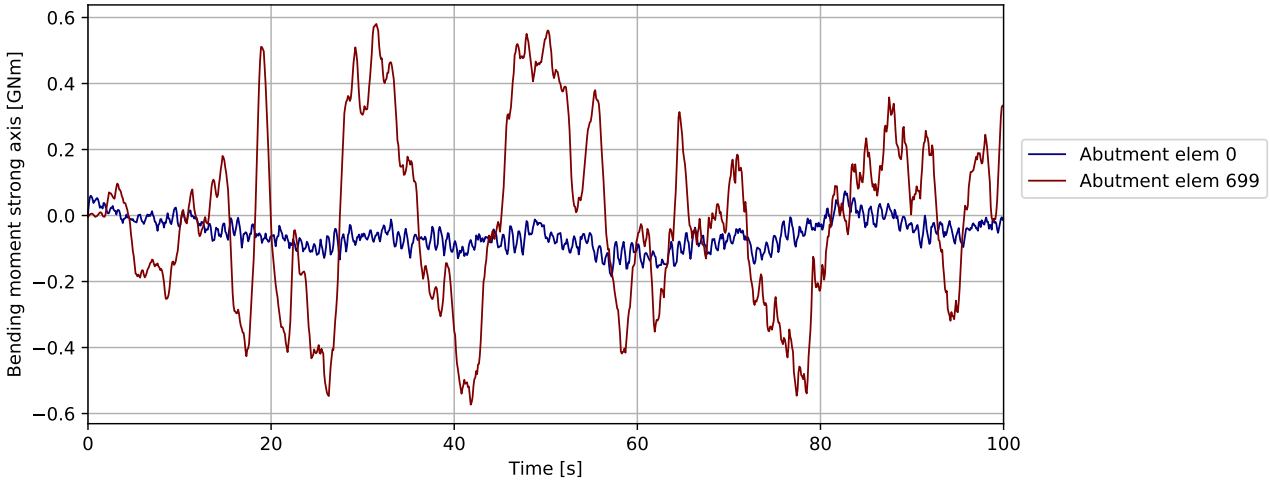

Figure 3.960: P A5 80deg - bridgegirder @abutments: Bending moment strong axis [GNm]

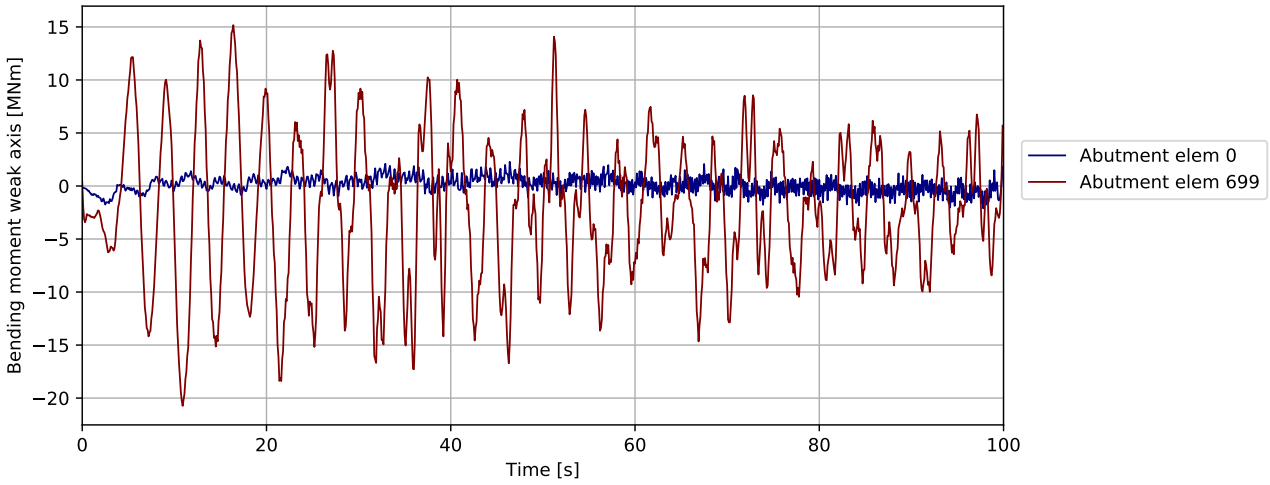

Figure 3.961: P A5 80deg - bridgegirder @abutments: Bending moment weak axis [MNm]

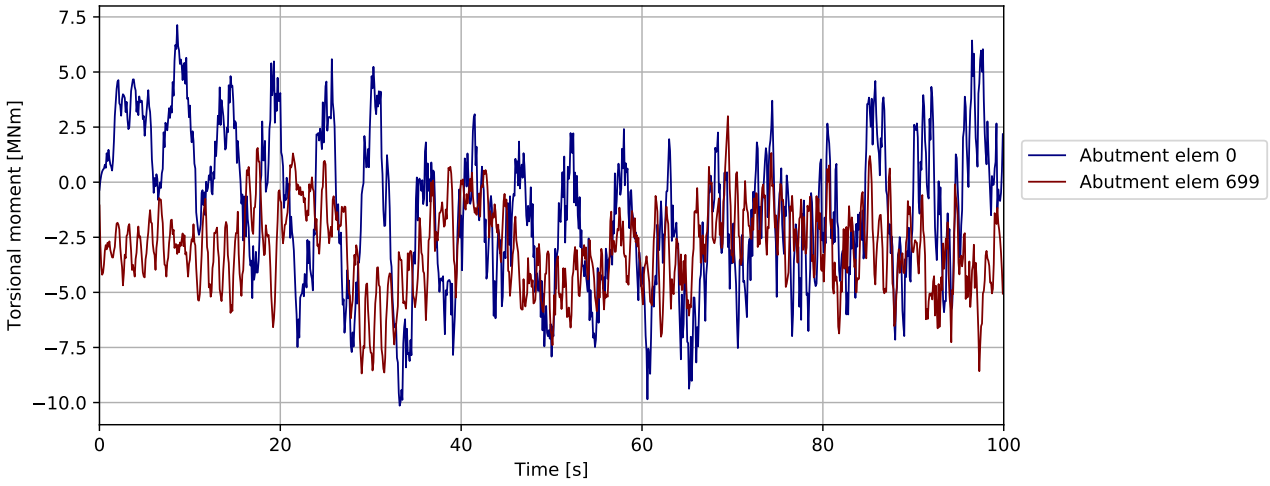

Figure 3.962: P A5 80deg - bridgegirder @abutments: Torsional moment [MNm]

Note : Compressive spring force is negative

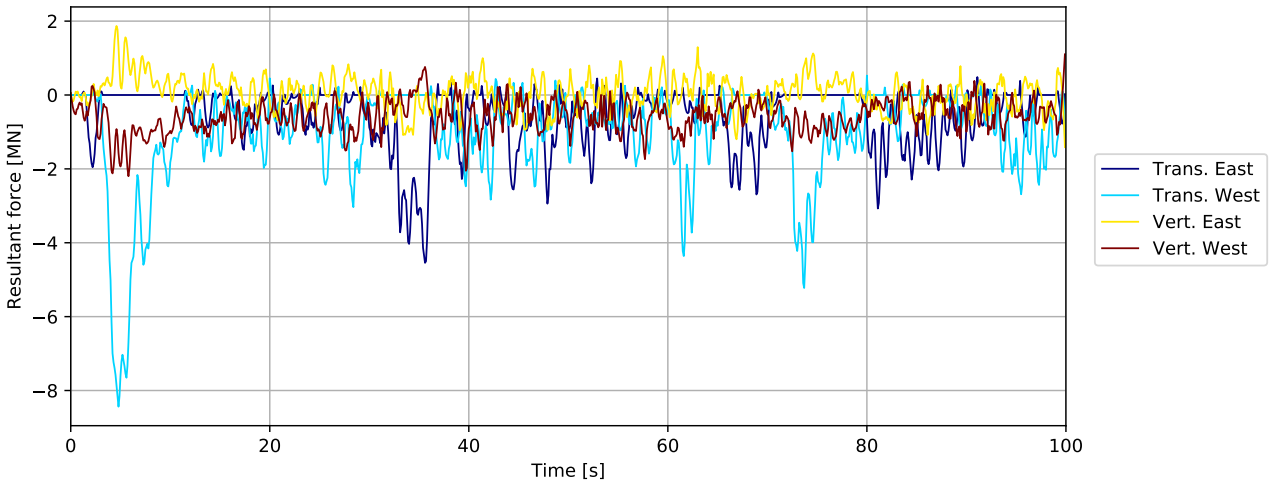

Figure 3.963: P A5 80deg - bridgegirder supports in tower: Resultant force [MN]

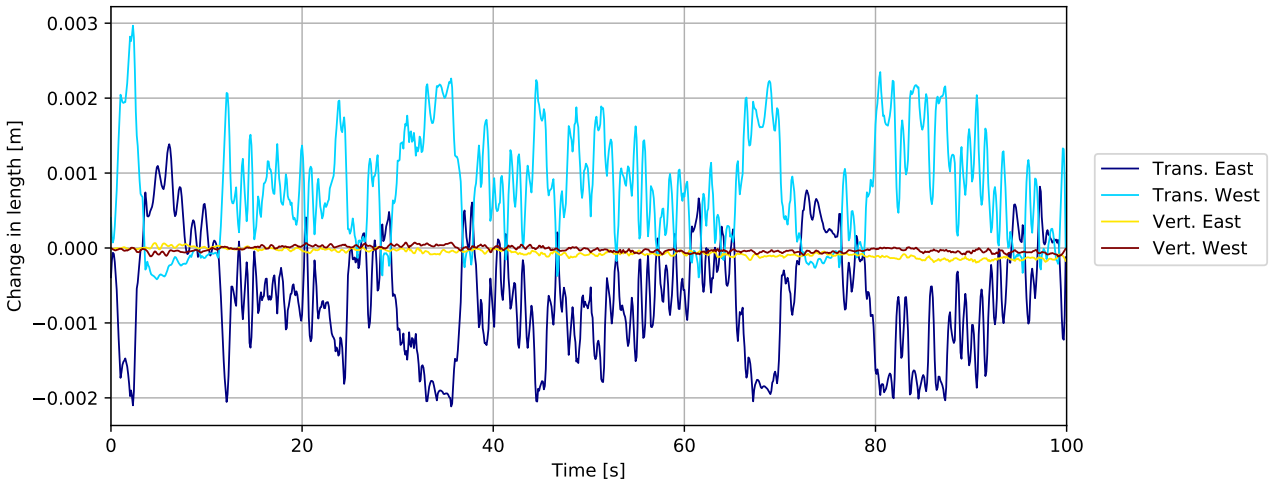

Figure 3.964: P A5 80deg - bridgegirder supports in tower: Change in length [m]

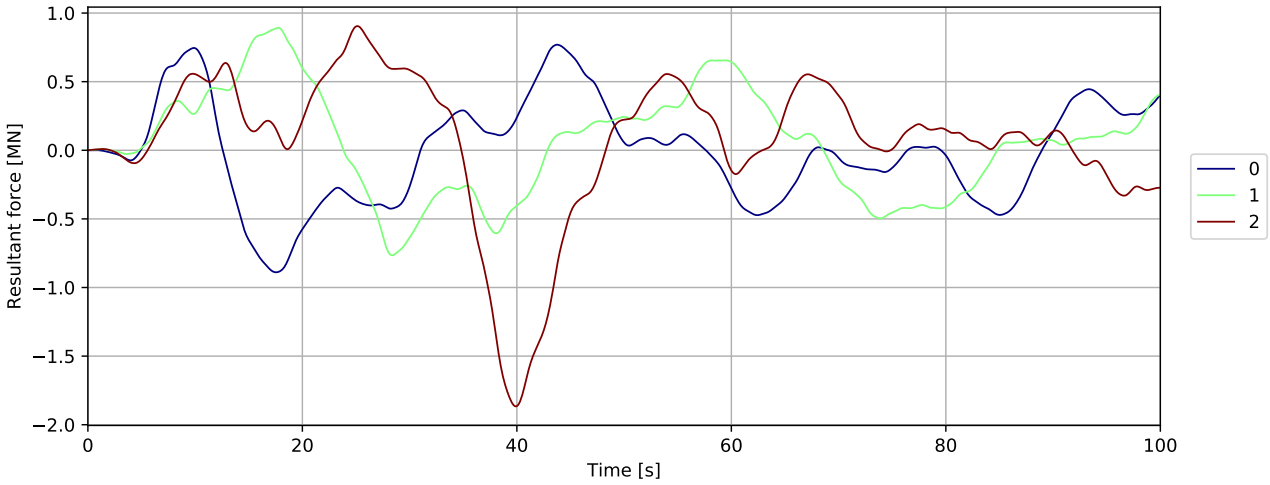

Figure 3.965: Mooring force

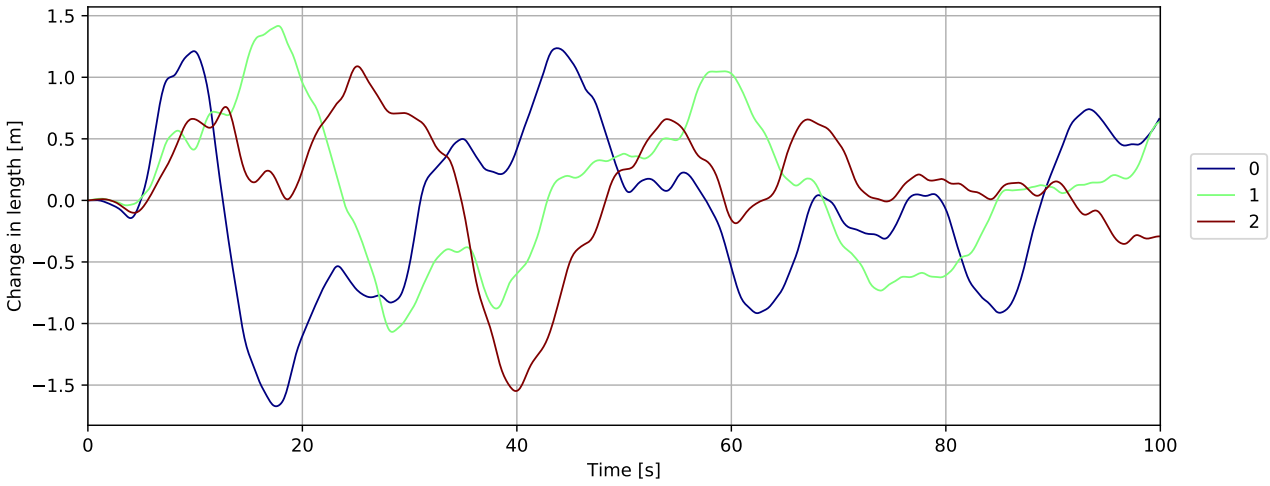

Figure 3.966: Mooring displacement

3.22 PontoonA10 80deg

3.22.1 Overall response

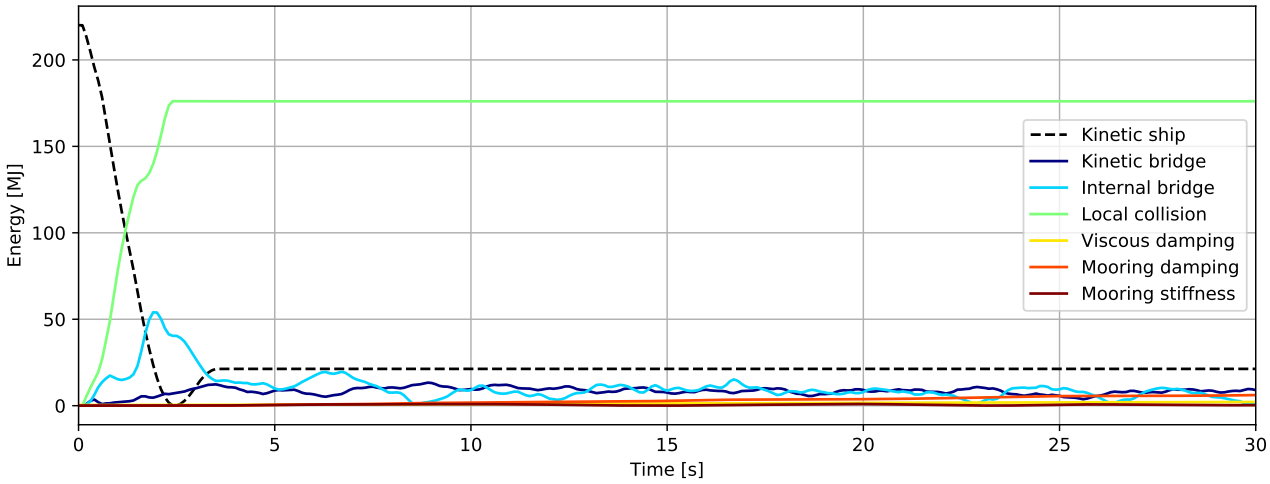

Figure 3.967: Energy [MJ] - initial phase

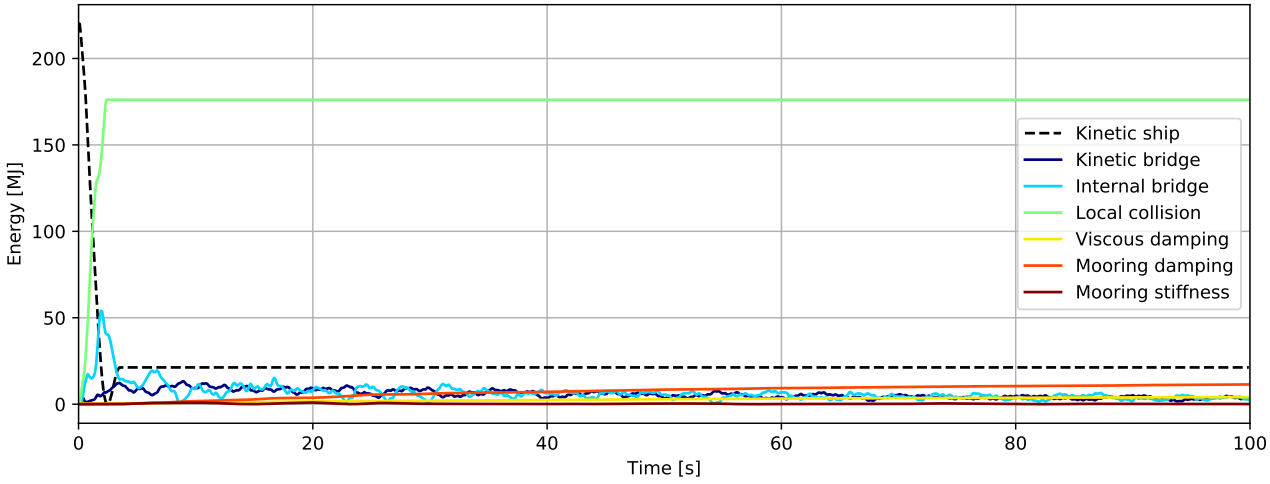

Figure 3.968: Energy [MJ]

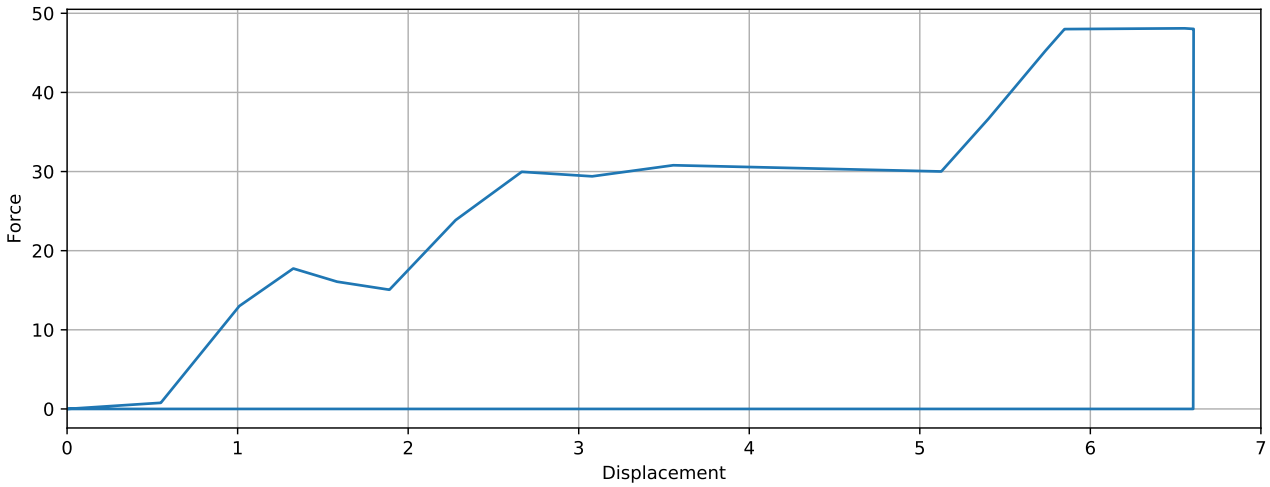

Figure 3.969: Simulated local collision force-displacement

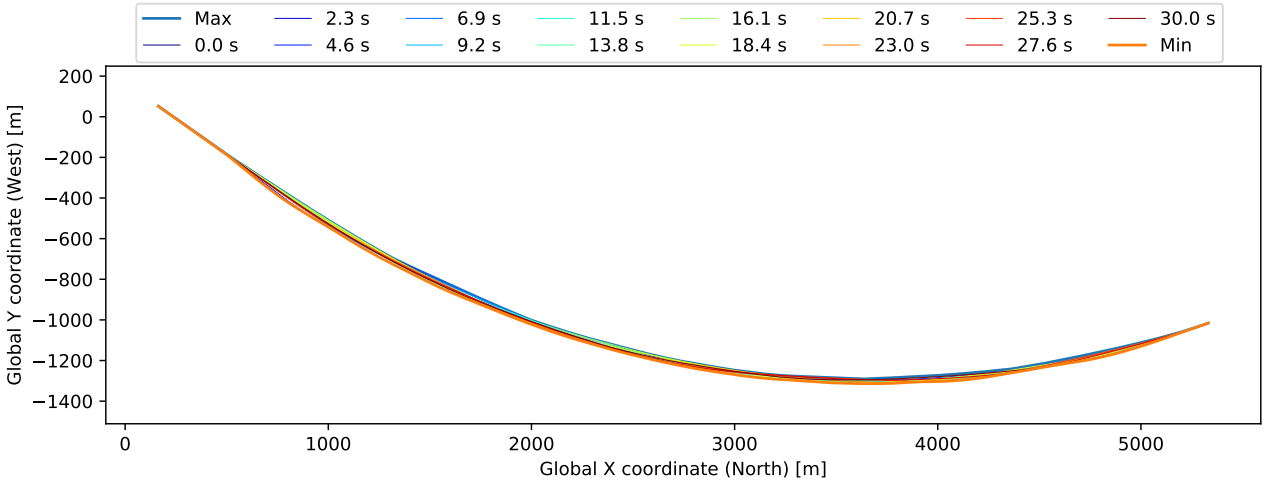

Figure 3.970: Bridgegirder deflection (10x displacment scaling)

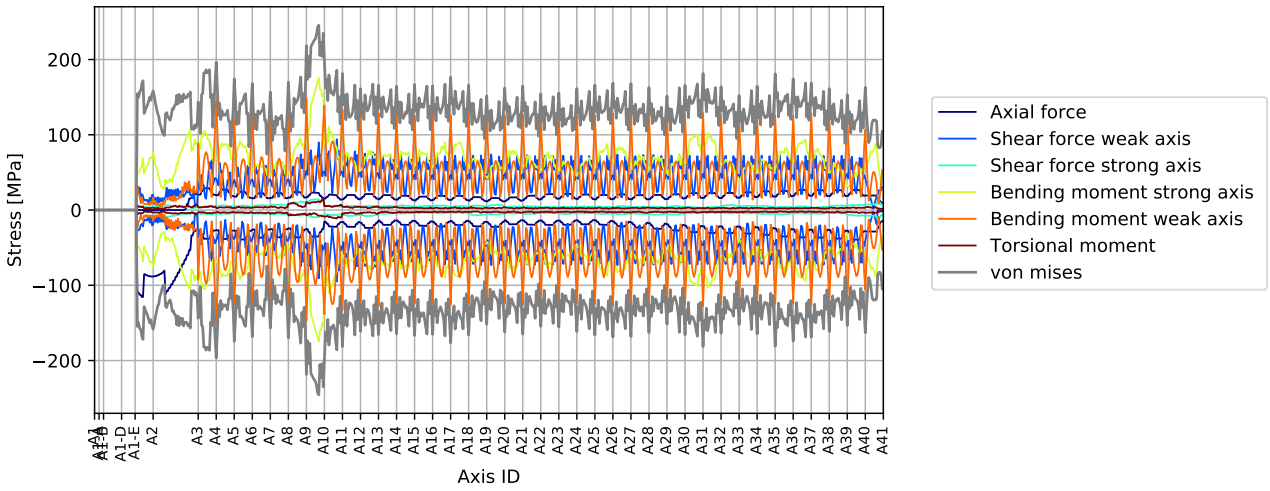

Figure 3.971: Stress envelope from all force components

3.22.2 Envelope plots

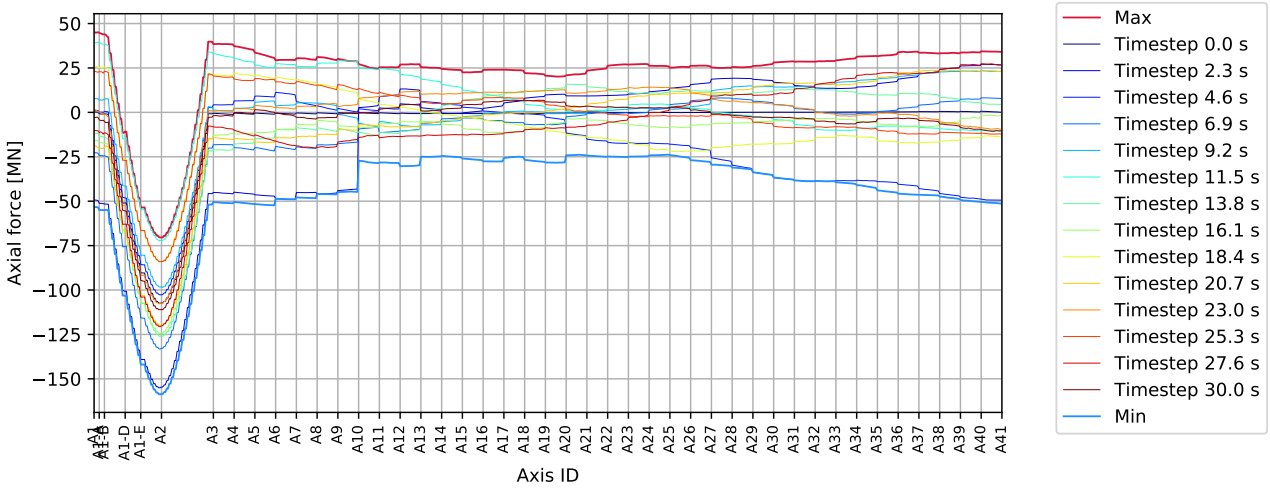

Figure 3.972: P A10 80deg - bridgegirder : Axial force [MN]

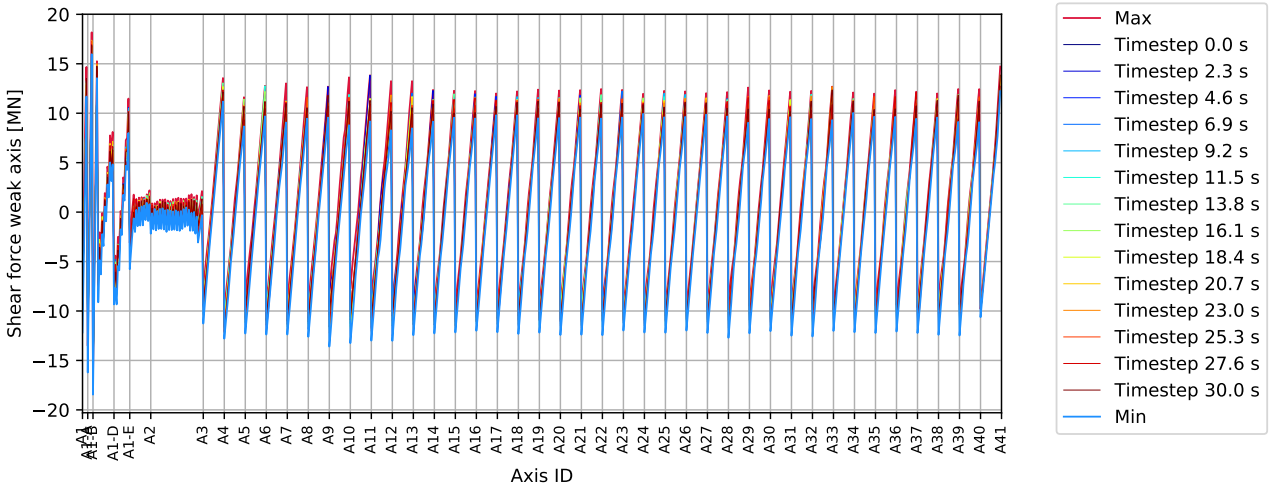

Figure 3.973: P A10 80deg - bridgegirder : Shear force weak axis [MN]

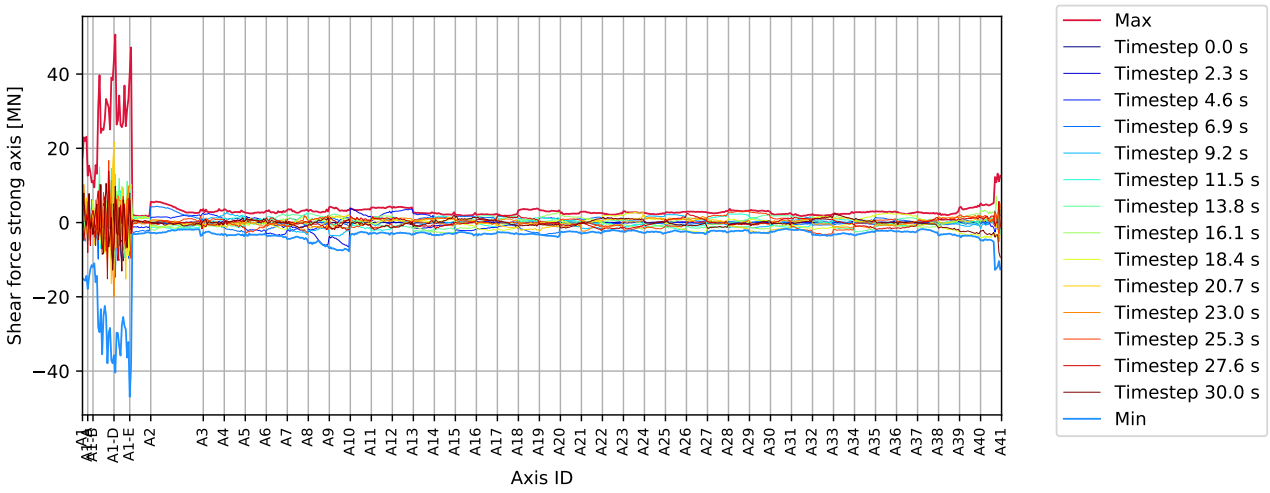

Figure 3.974: P A10 80deg - bridgegirder : Shear force strong axis [MN]

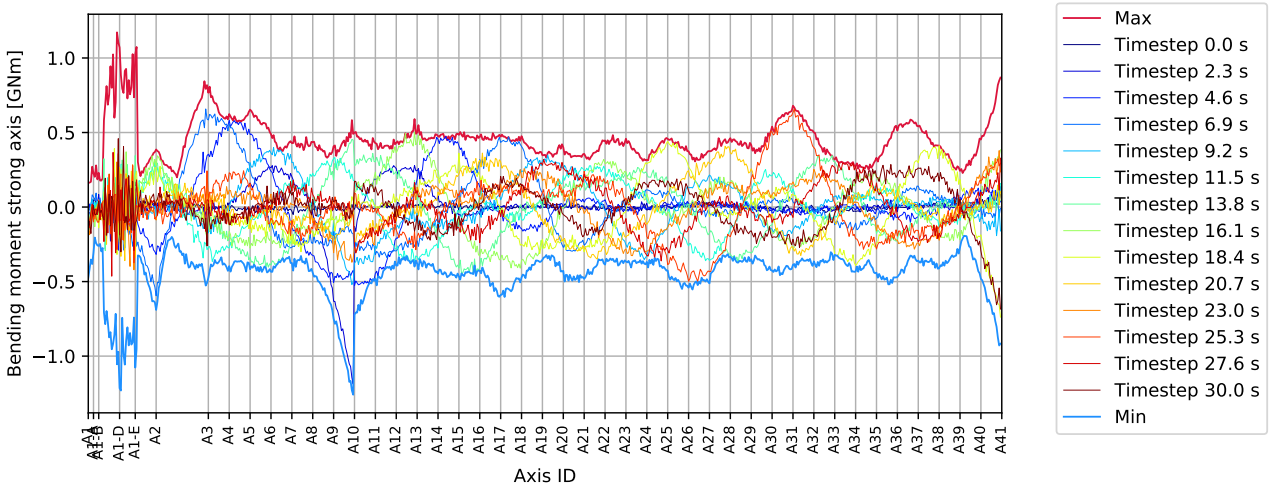

Figure 3.975: P A10 80deg - bridgegirder : Bending moment strong axis [GNm]

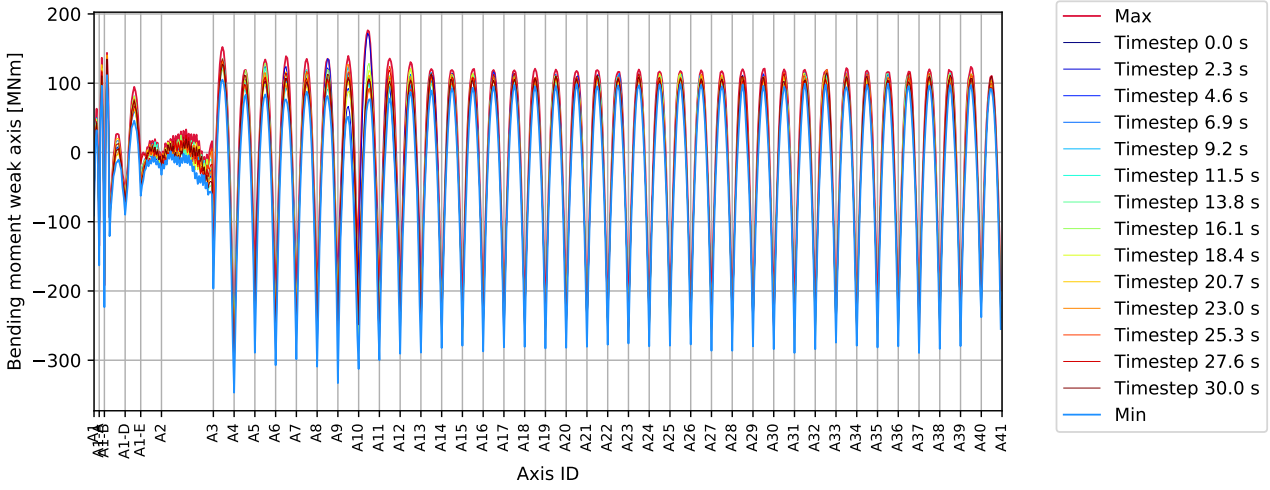

Figure 3.976: P A10 80deg - bridgegirder : Bending moment weak axis [MNm]

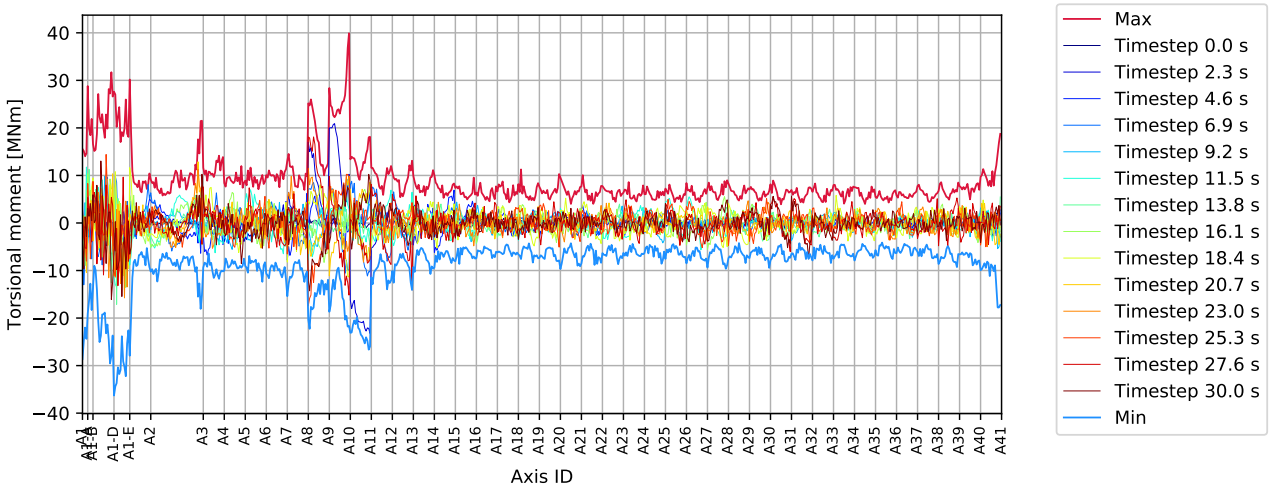

Figure 3.977: P A10 80deg - bridgegirder : Torsional moment [MNm]

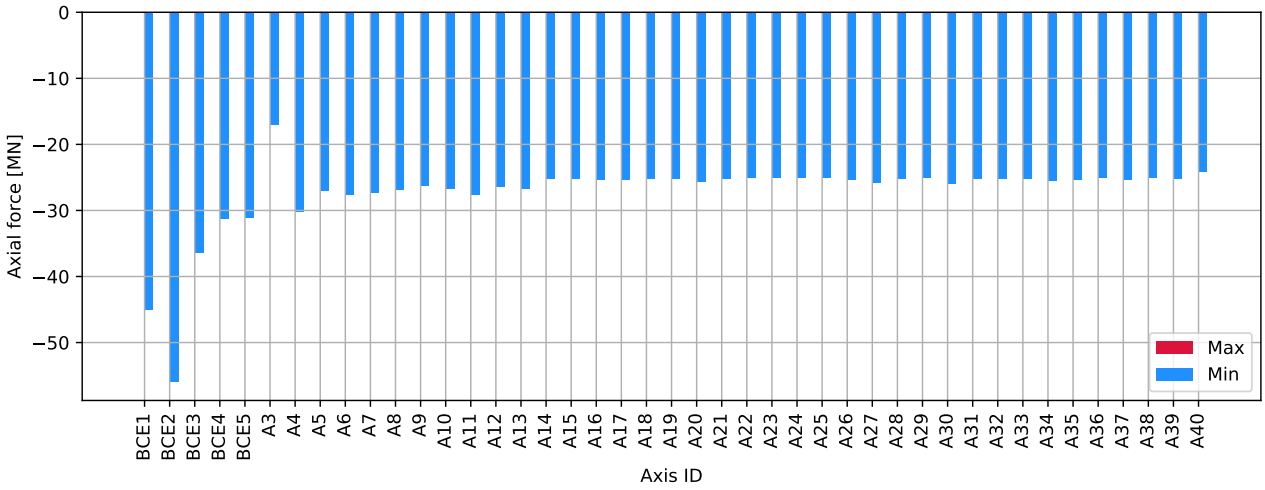

Figure 3.978: P A10 80deg - columns bottom : Axial force [MN]

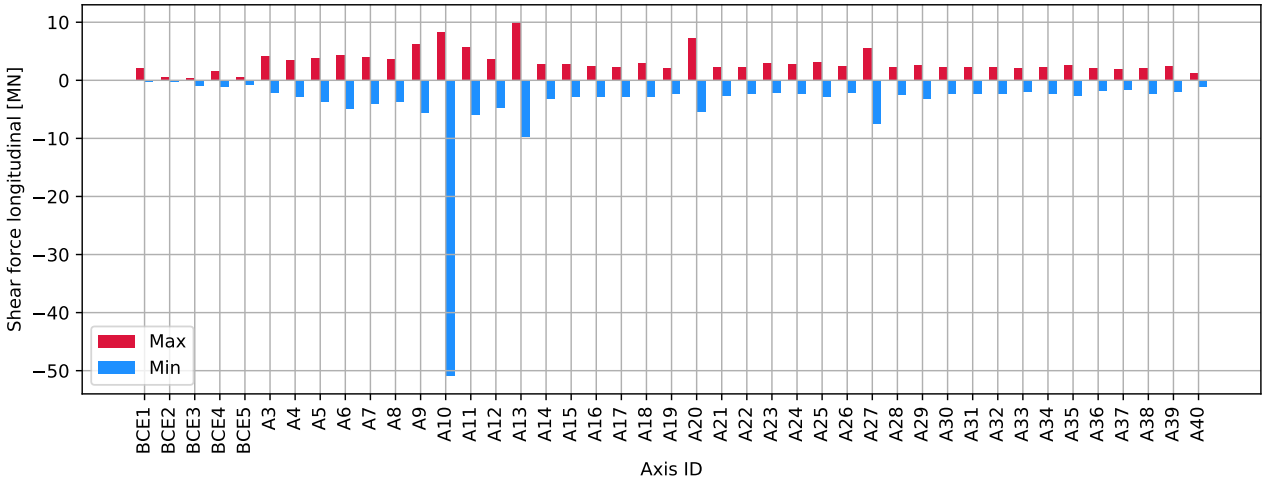

Figure 3.979: P A10 80deg - columns bottom : Shear force longitudinal [MN]

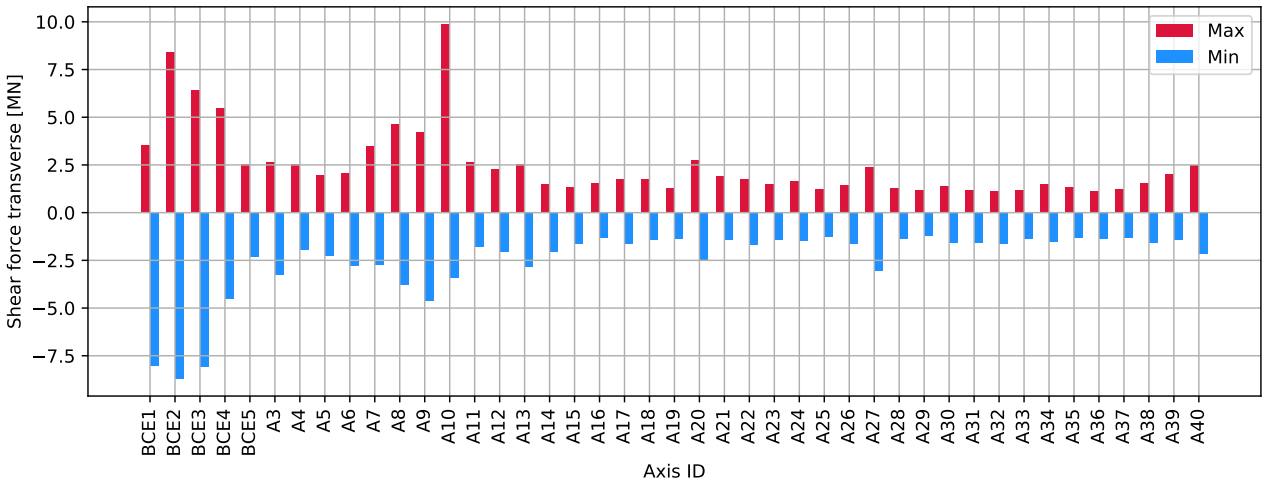

Figure 3.980: P A10 80deg - columns bottom : Shear force transverse [MN]

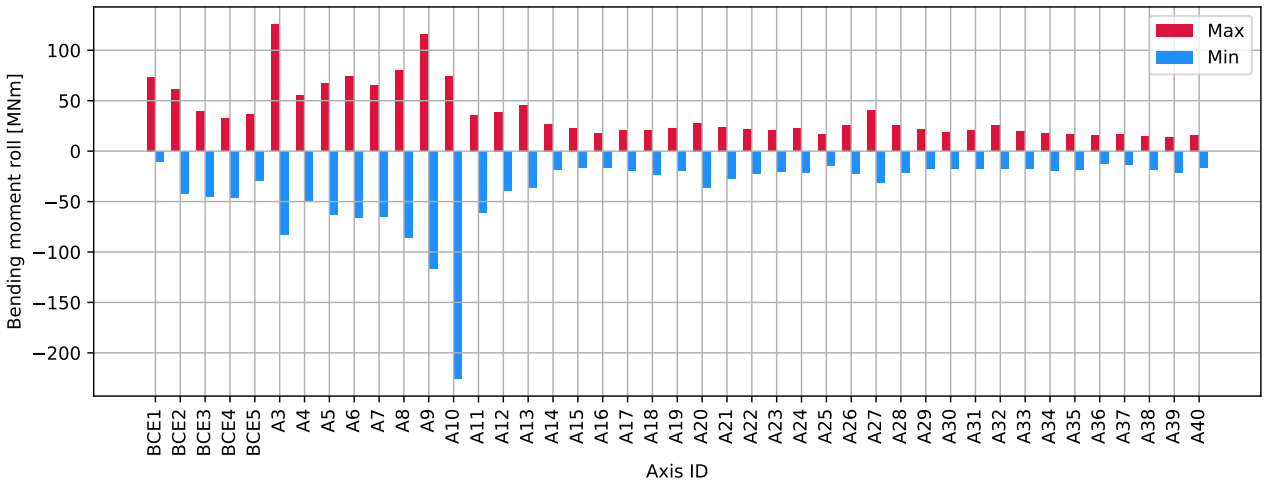

Figure 3.981: P A10 80deg - columns bottom : Bending moment roll [MNm]

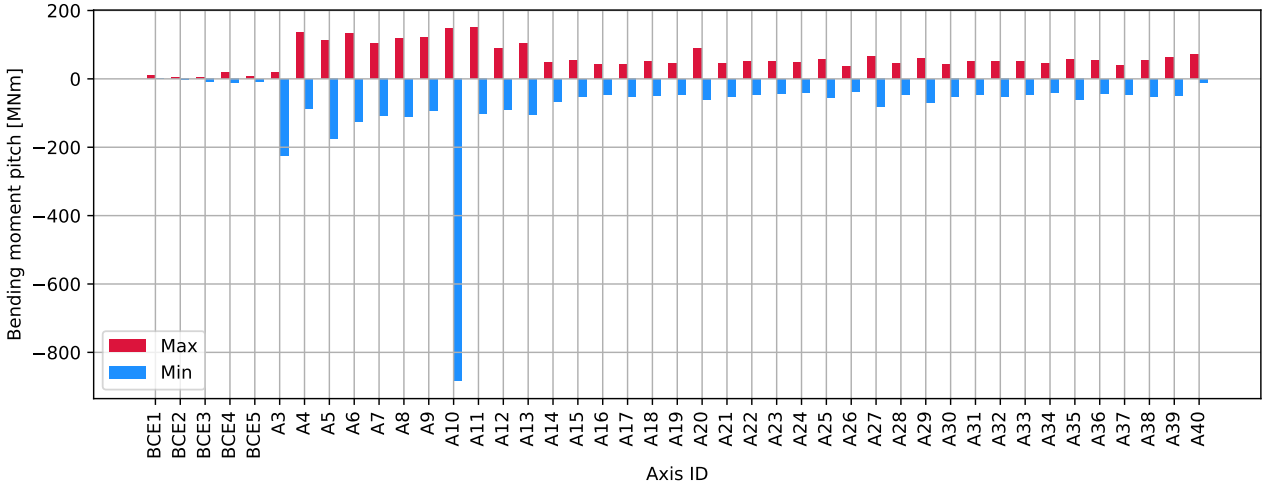

Figure 3.982: P A10 80deg - columns bottom : Bending moment pitch [MNm]

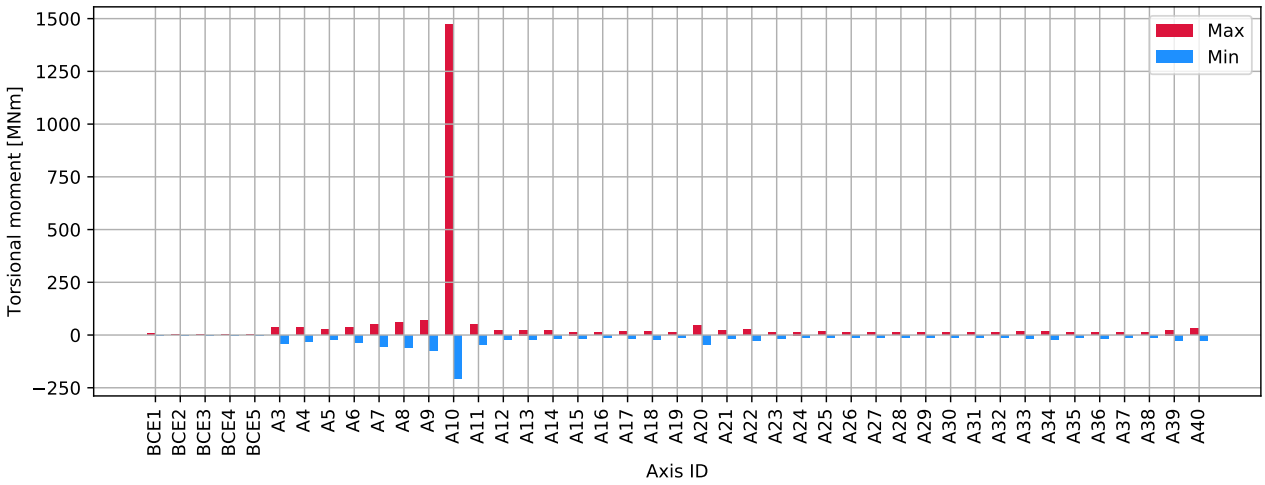

Figure 3.983: P A10 80deg - columns bottom : Torsional moment [MNm]

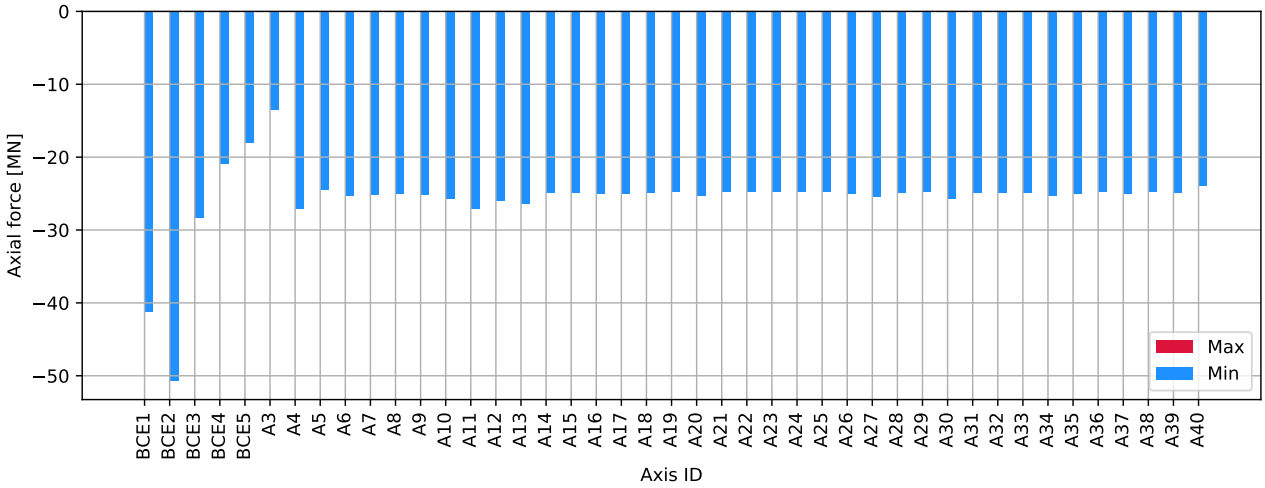

Figure 3.984: P A10 80deg - columns top : Axial force [MN]

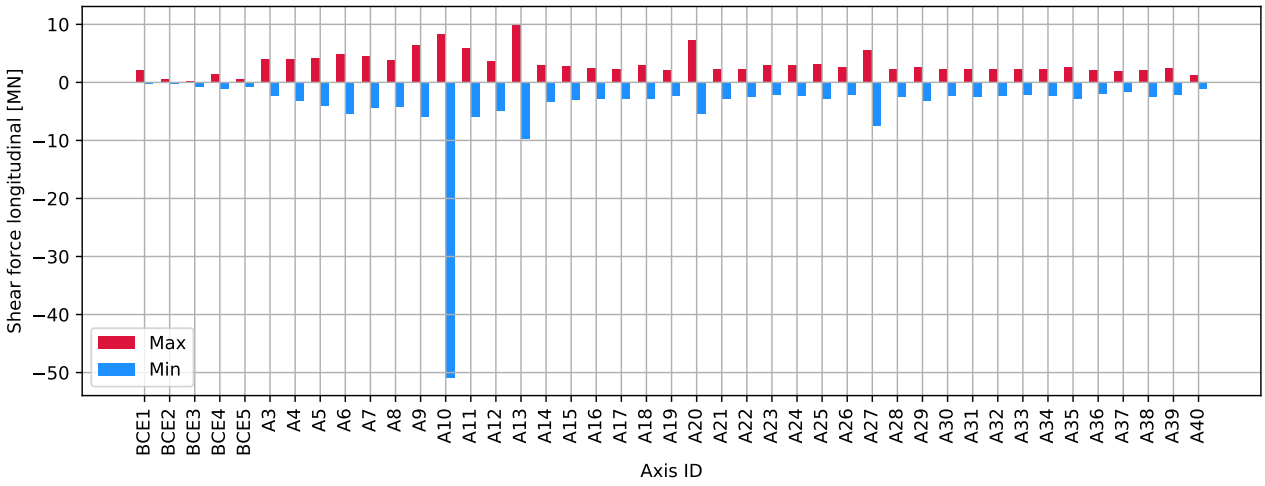

Figure 3.985: P A10 80deg - columns top : Shear force longitudinal [MN]

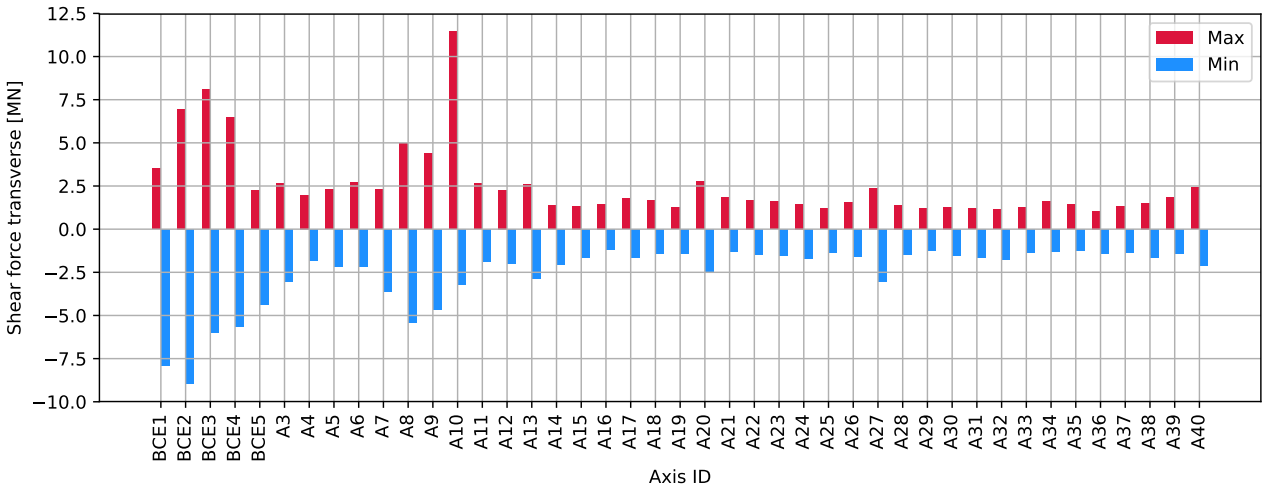

Figure 3.986: P A10 80deg - columns top : Shear force transverse [MN]

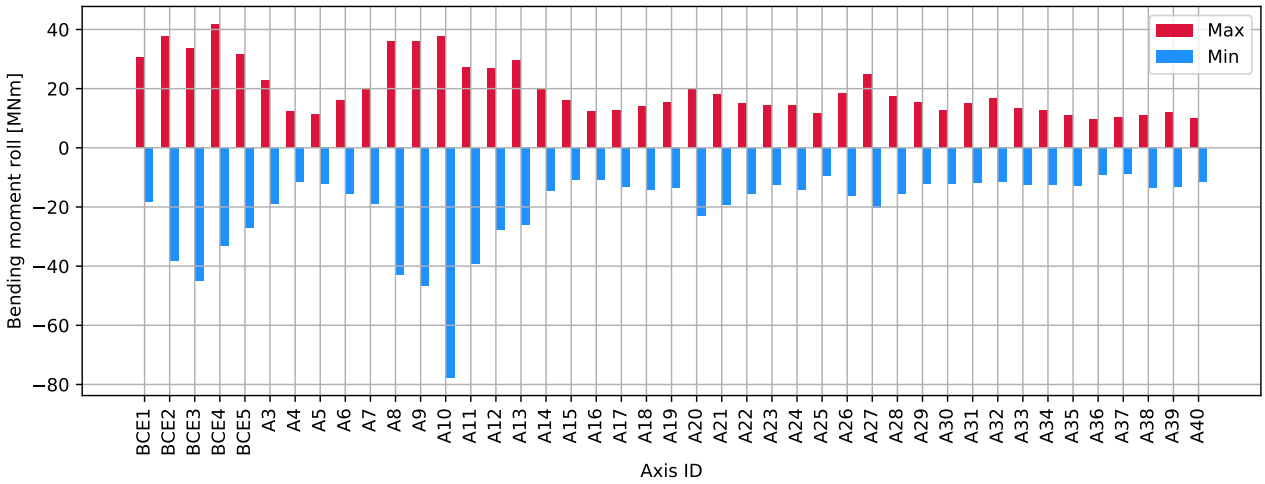

Figure 3.987: P A10 80deg - columns top : Bending moment roll [MNm]

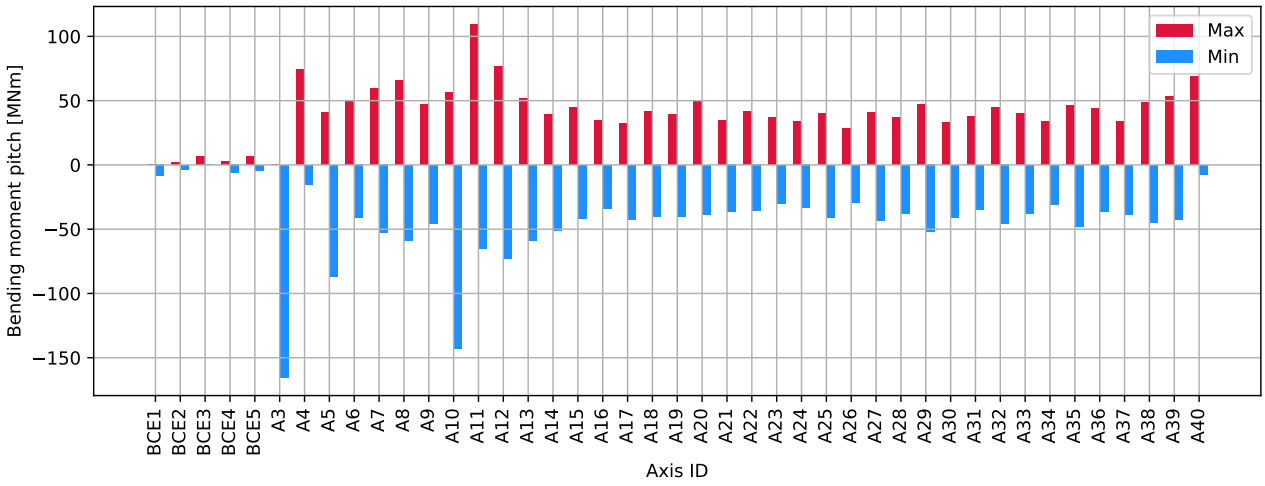

Figure 3.988: P A10 80deg - columns top : Bending moment pitch [MNm]

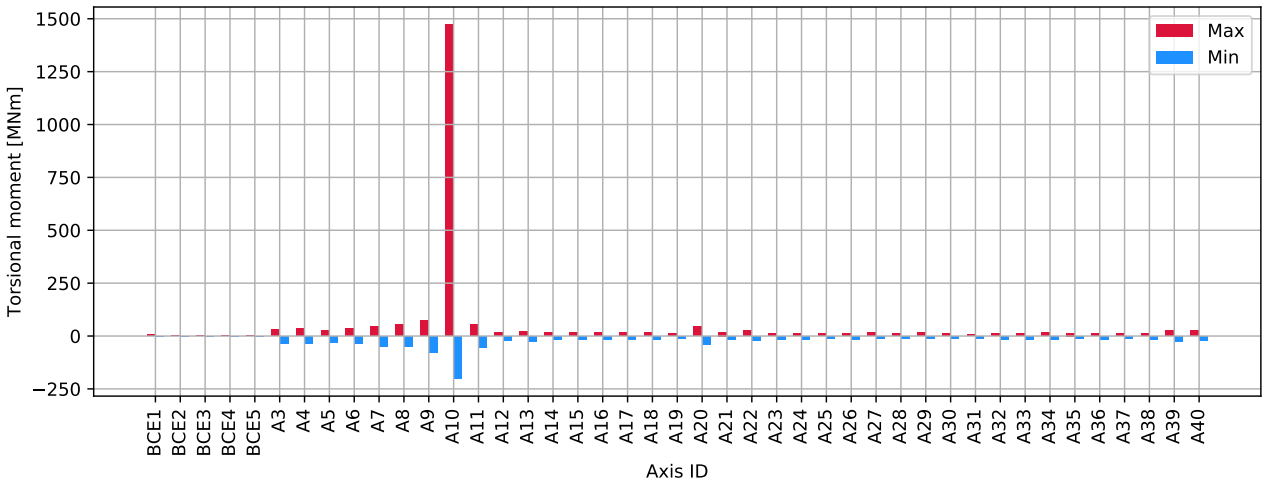

Figure 3.989: P A10 80deg - columns top : Torsional moment [MNm]

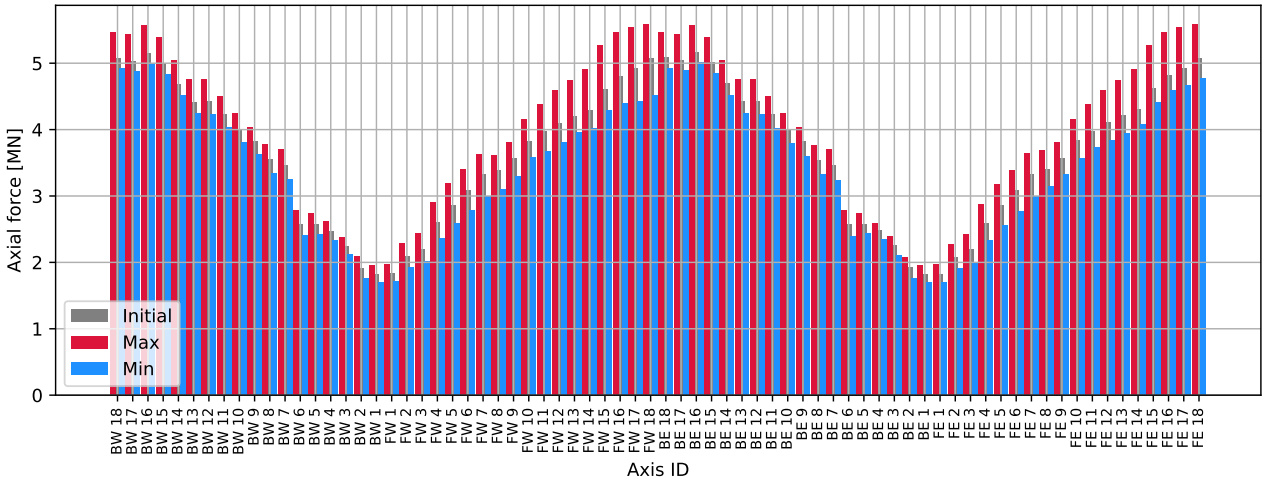

Figure 3.990: P A10 80deg - cables : Axial force [MN]

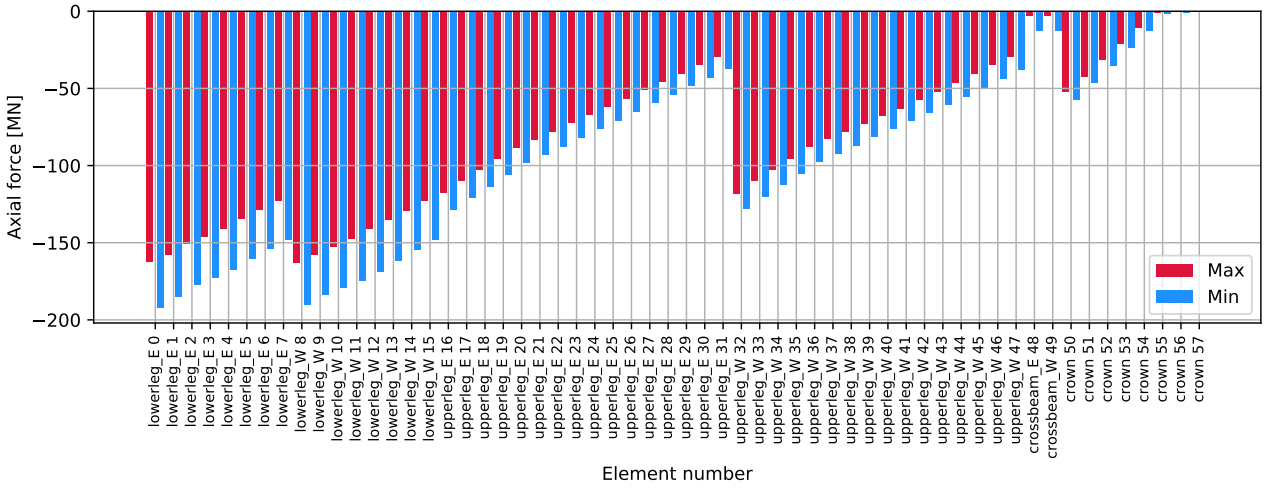

Figure 3.991: P A10 80deg - tower: Axial force [MN]

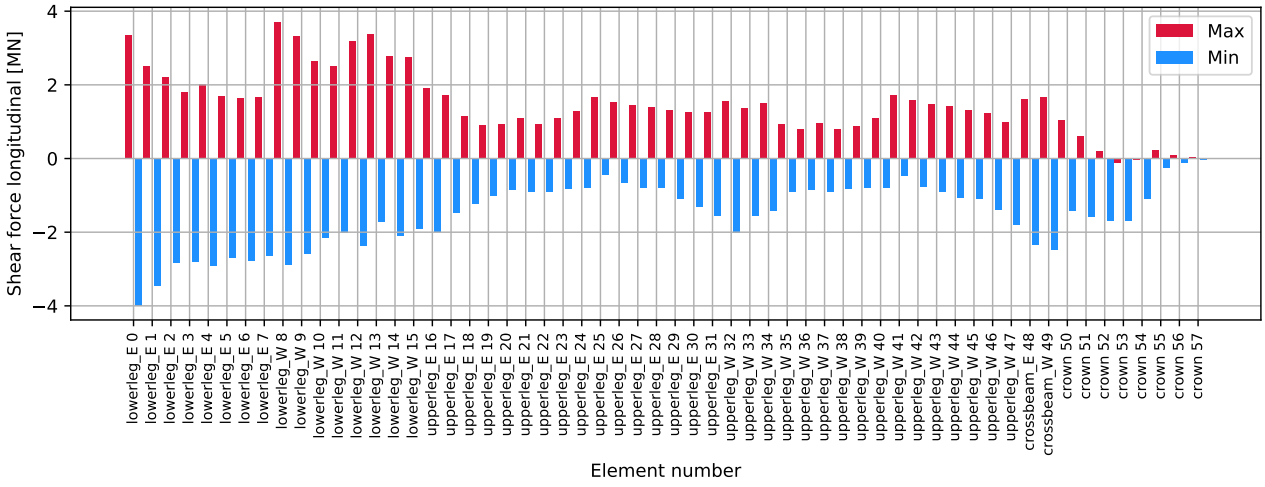

Figure 3.992: P A10 80deg - tower: Shear force longitudinal [MN]

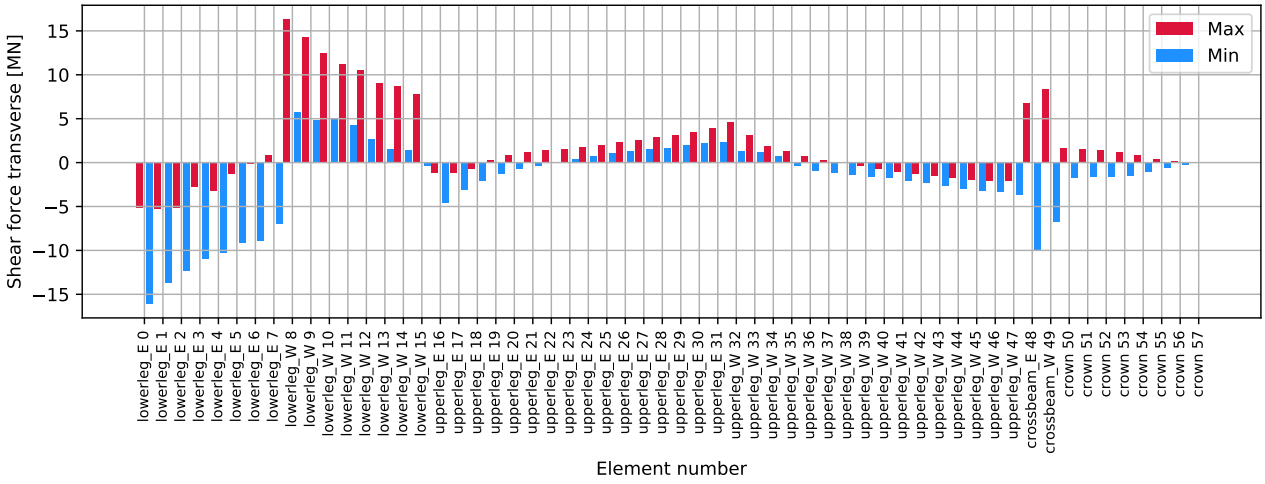

Figure 3.993: P A10 80deg - tower: Shear force transverse [MN]

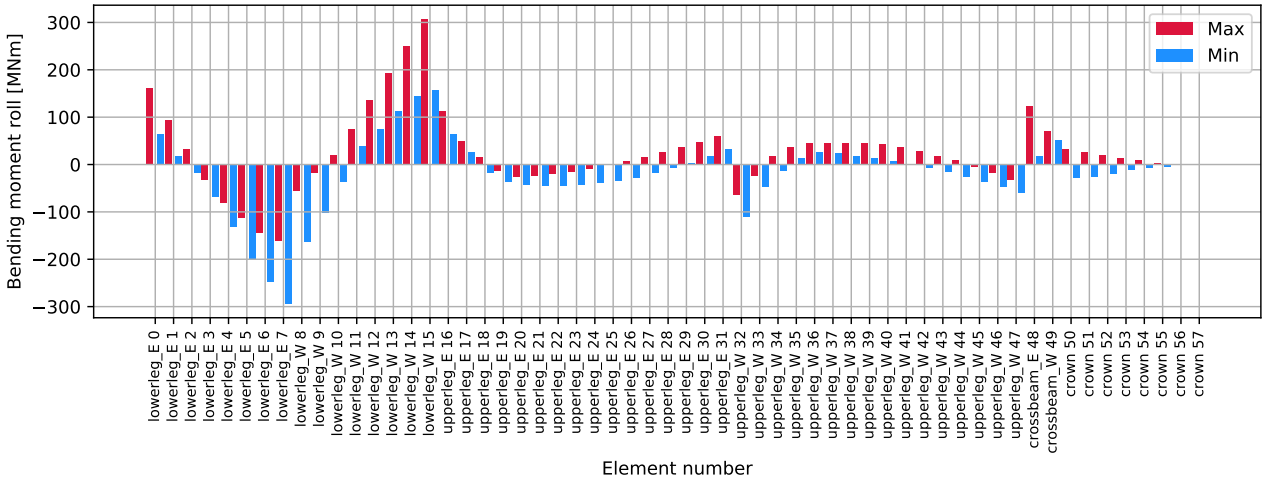

Figure 3.994: P A10 80deg - tower: Bending moment roll [MNm]

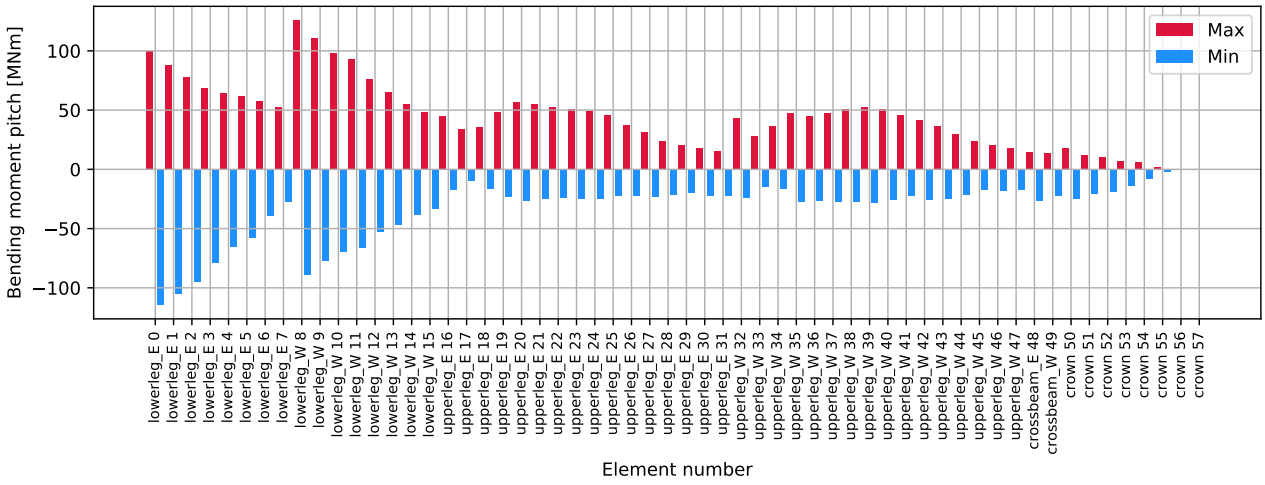

Figure 3.995: P A10 80deg - tower: Bending moment pitch [MNm]

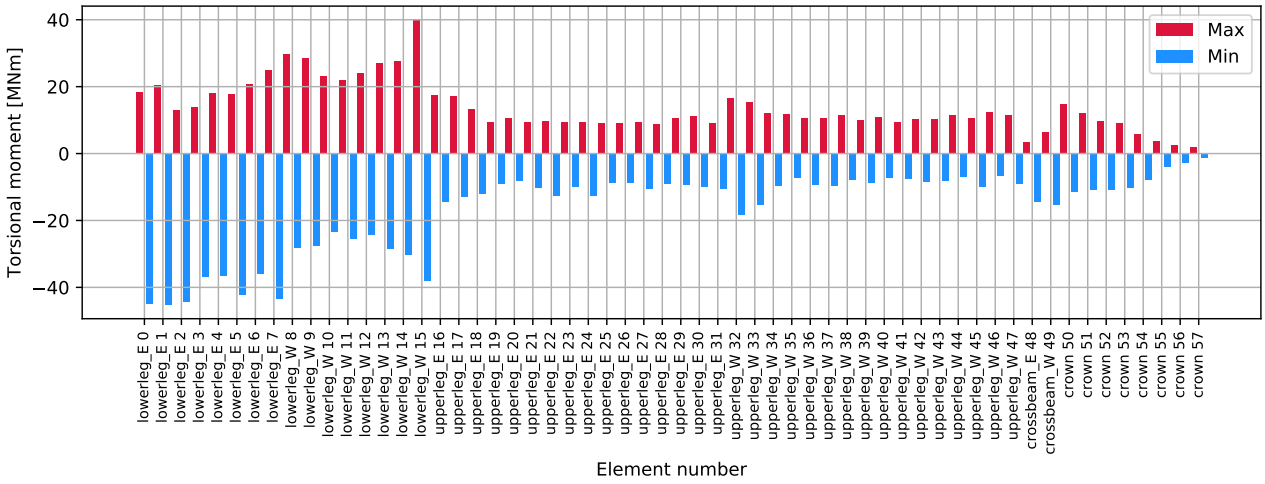

Figure 3.996: P A10 80deg - tower: Torsional moment [MNm]

3.22.3 Time series

Note : Time series are filtered using a Saviotzky-Golay filter for increased readability of the time history plots. Hence, maximum values that occur due to a rapid vibration are not shown in the plots. For maximum values, refer to the tabulated data.
All elements are numbered from South to North, bottom to top

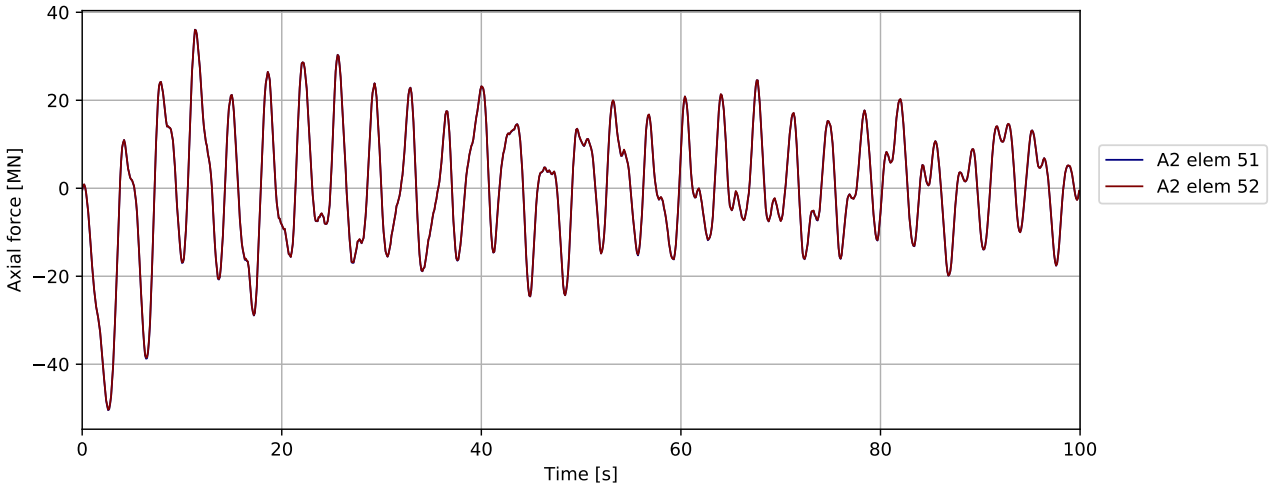

Figure 3.997: P A10 80deg - bridgegirder @ pylon: Axial force [MN]

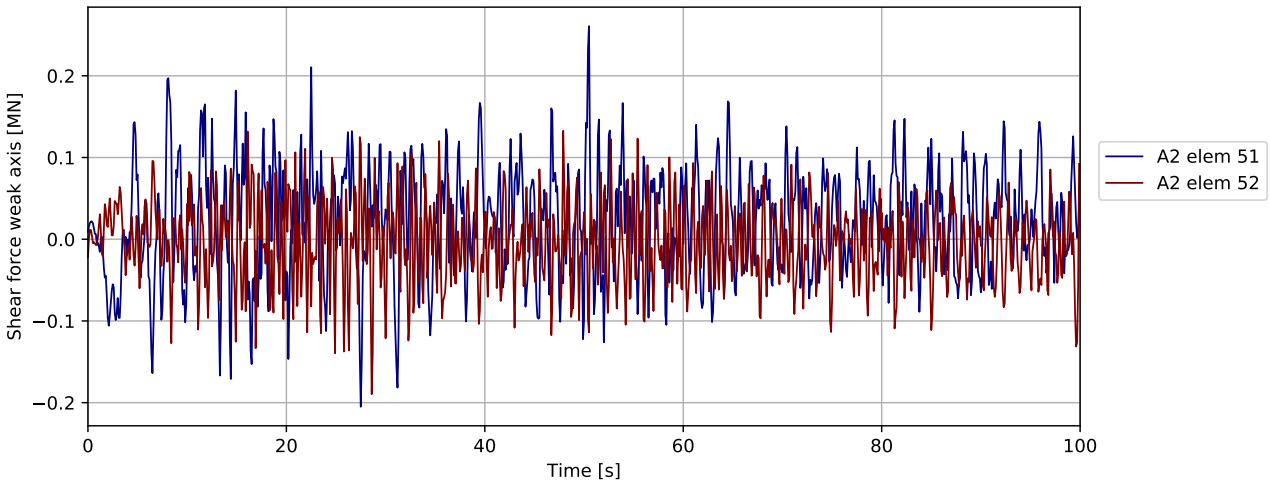

Figure 3.998: P A10 80deg - bridgegirder @ pylon: Shear force weak axis [MN]

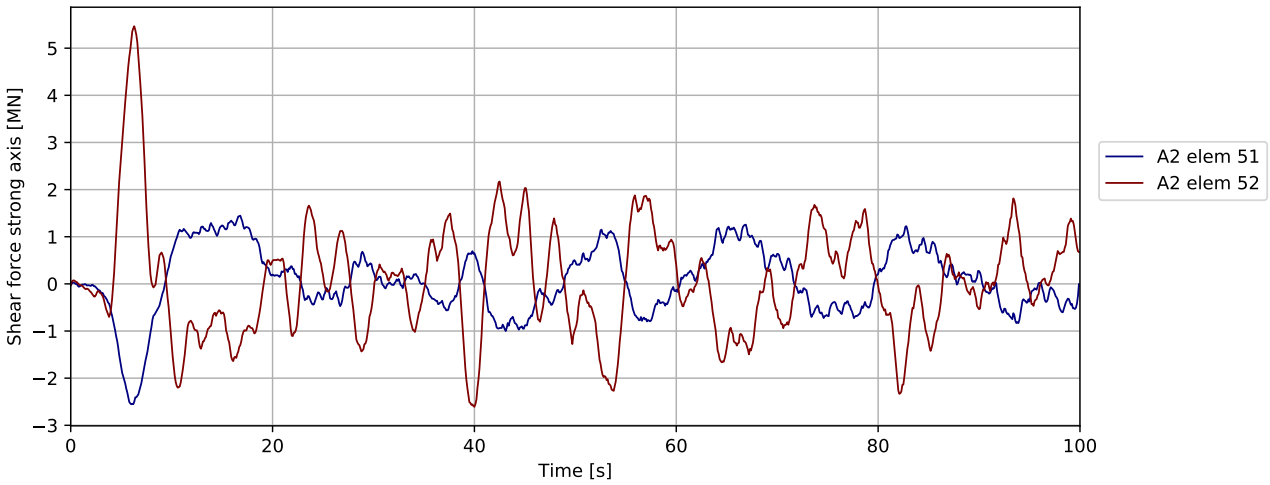

Figure 3.999: P A10 80deg - bridgegirder @ pylon: Shear force strong axis [MN]

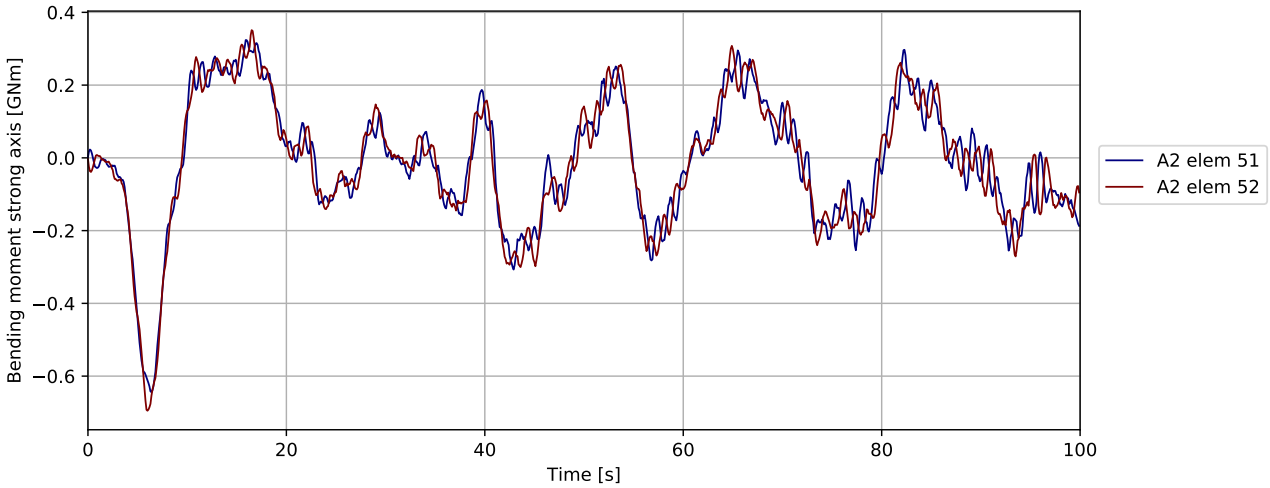

Figure 3.1000: P A10 80deg - bridgegirder @ pylon: Bending moment strong axis [GNm]

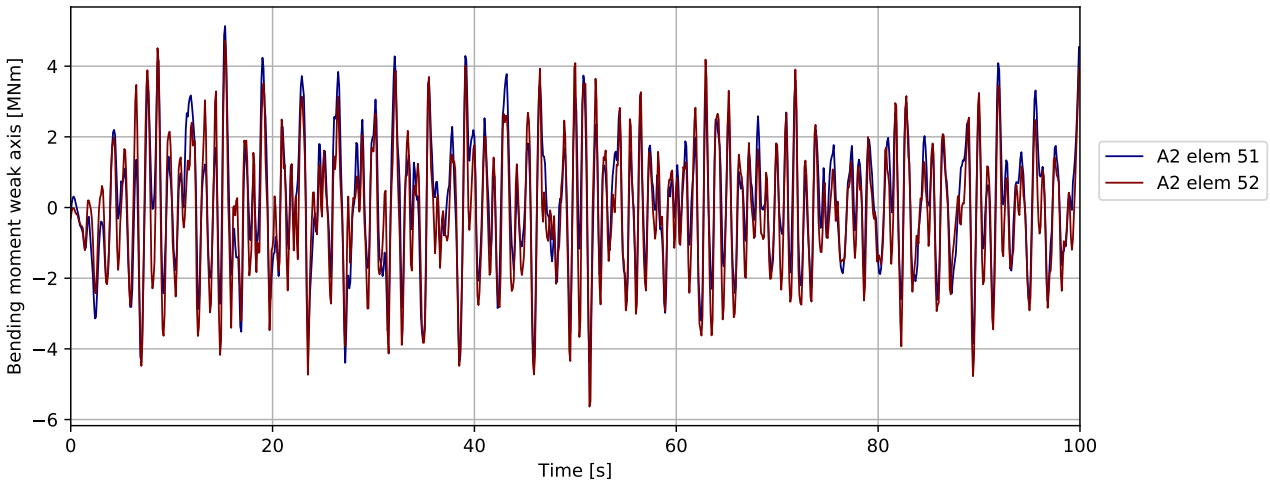

Figure 3.1001: P A10 80deg - bridgegirder @ pylon: Bending moment weak axis [MNm]

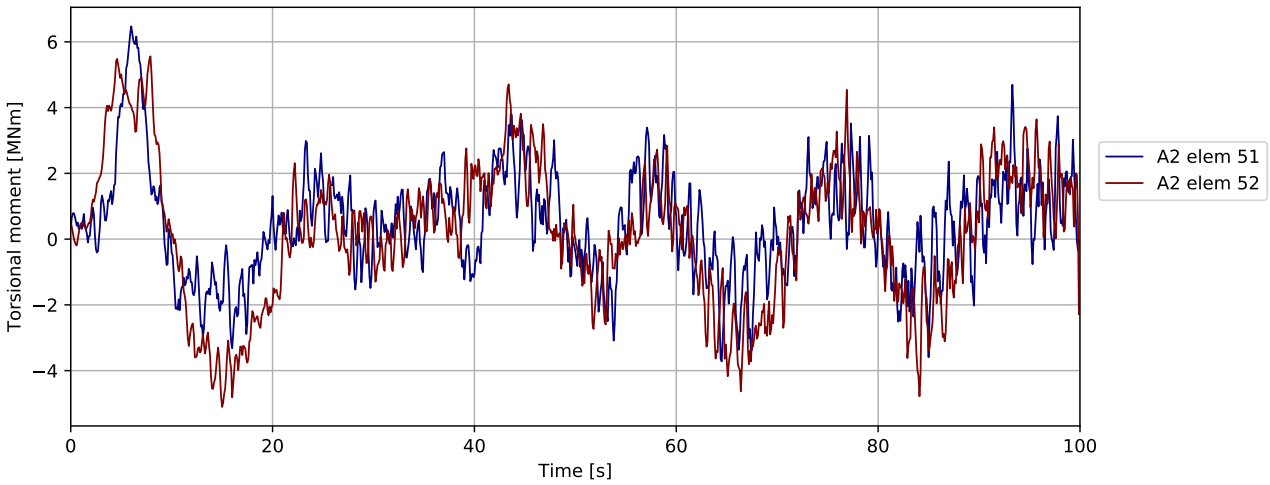

Figure 3.1002: P A10 80deg - bridgegirder @ pylon: Torsional moment [MNm]

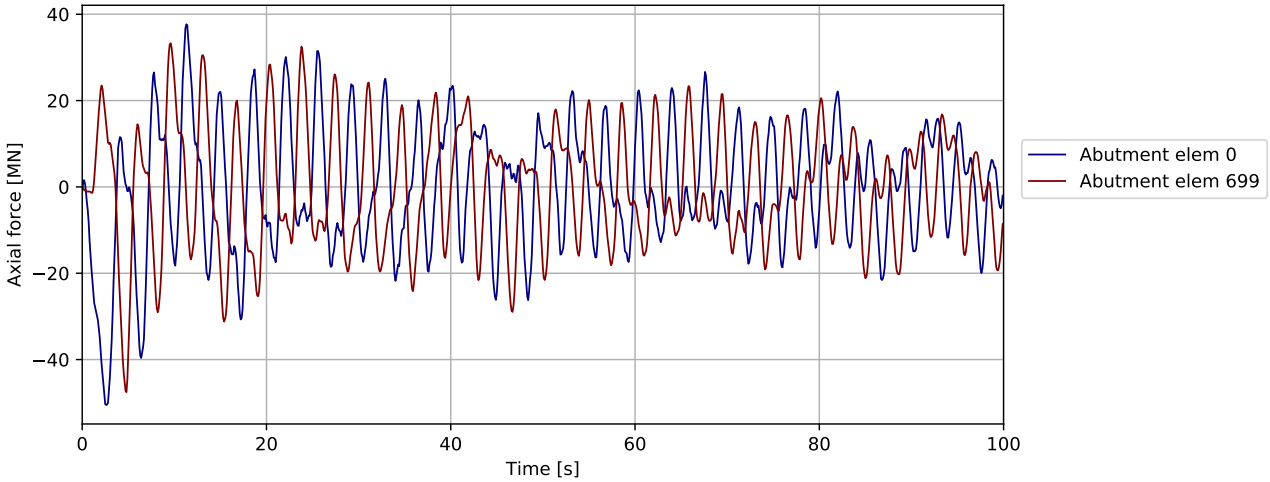

Figure 3.1003: P A10 80deg - bridgegirder @abutments: Axial force [MN]

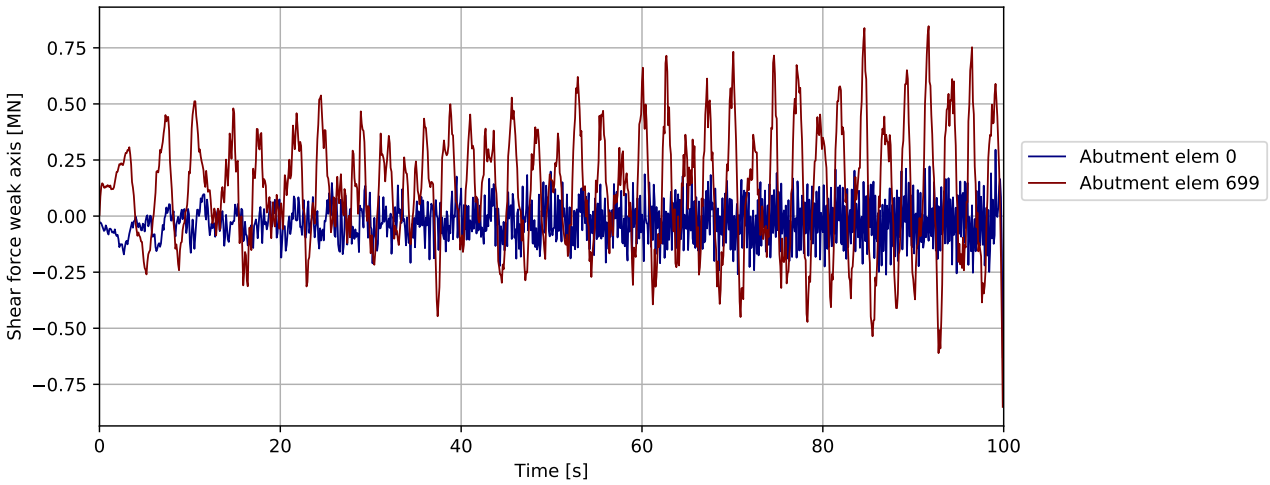

Figure 3.1004: P A10 80deg - bridgegirder @abutments: Shear force weak axis [MN]

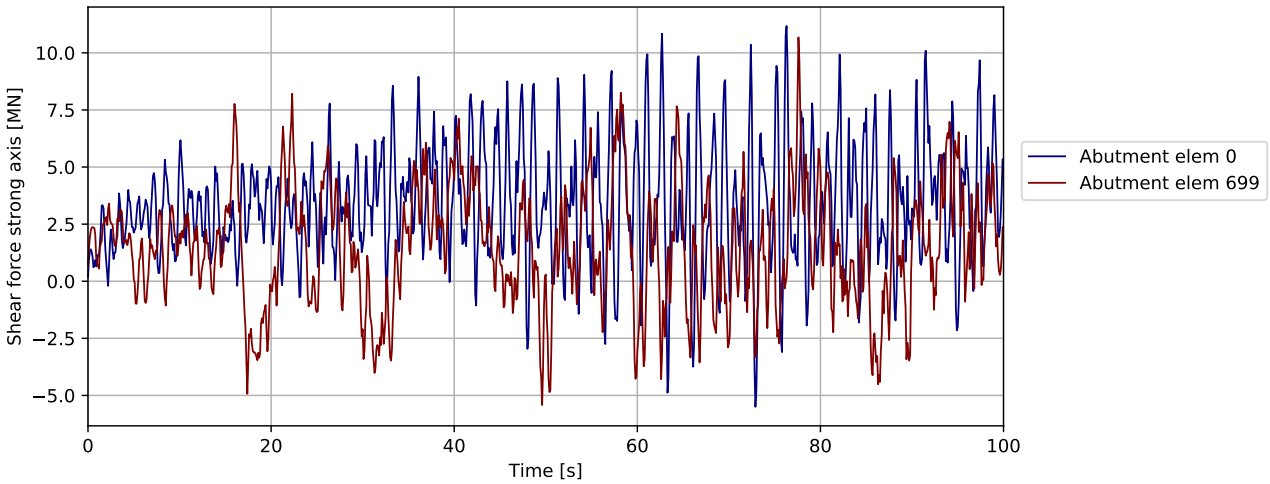

Figure 3.1005: P A10 80deg - bridgegirder @abutments: Shear force strong axis [MN]

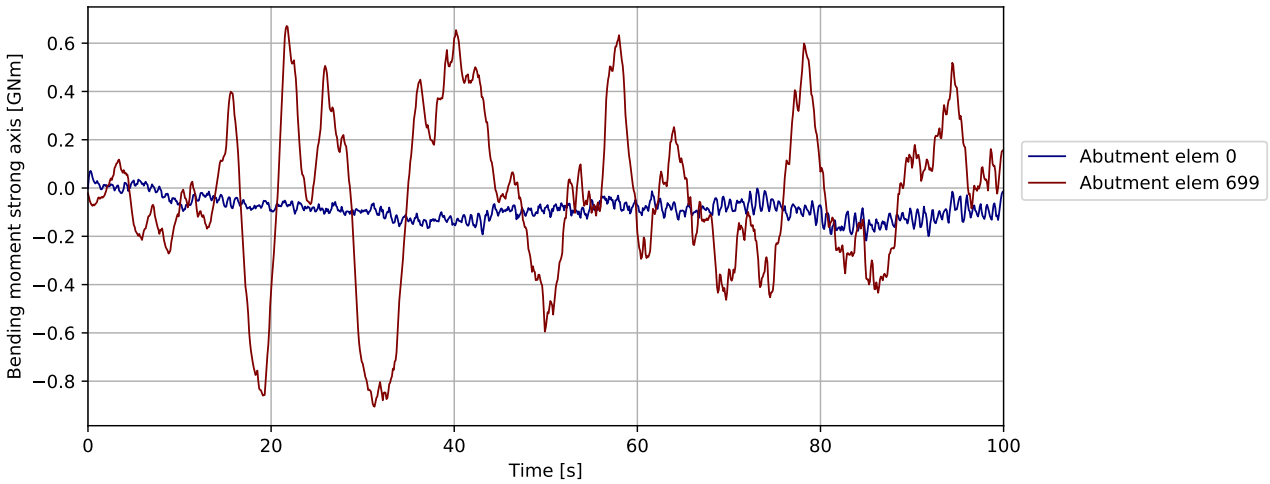

Figure 3.1006: P A10 80deg - bridgegirder @abutments: Bending moment strong axis [GNm]

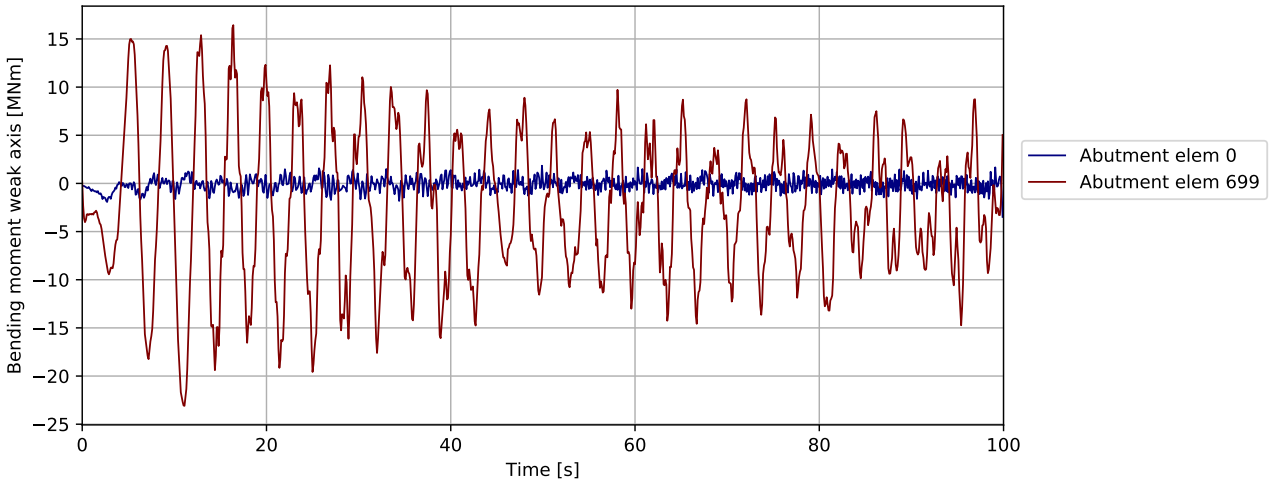

Figure 3.1007: P A10 80deg - bridgegirder @abutments: Bending moment weak axis [MNm]

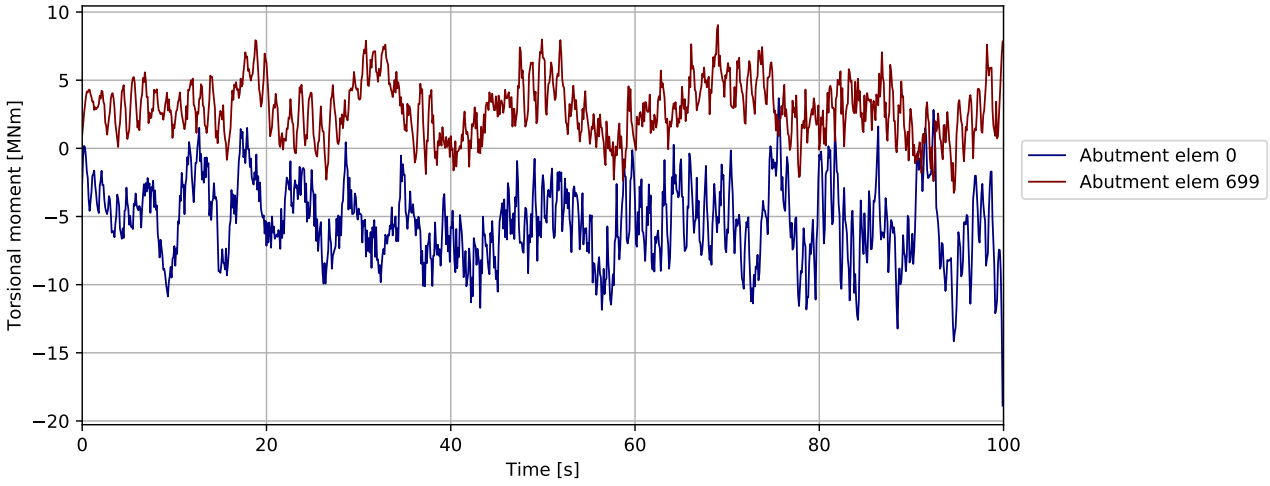

Figure 3.1008: P A10 80deg - bridgegirder @abutments: Torsional moment [MNm]

Note : Compressive spring force is negative

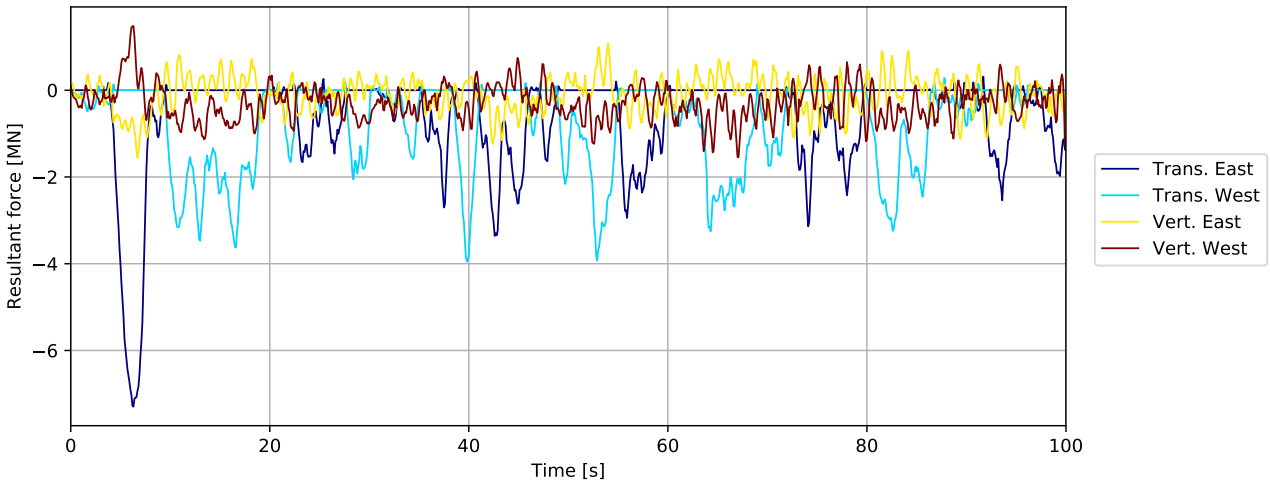

Figure 3.1009: P A10 80deg - bridgegirder supports in tower: Resultant force [MN]

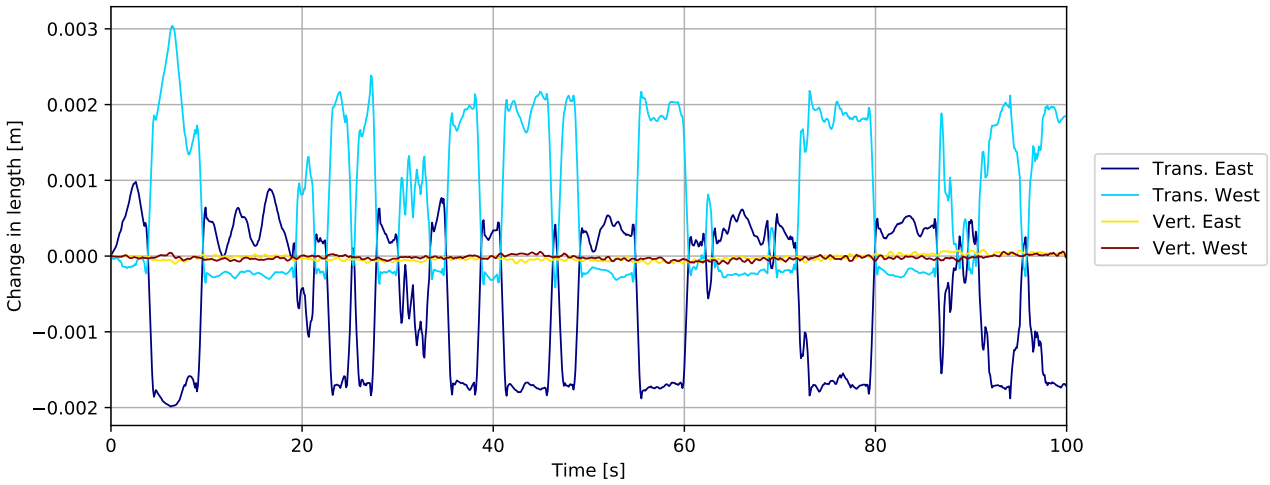

Figure 3.1010: P A10 80deg - bridgegirder supports in tower: Change in length [m]

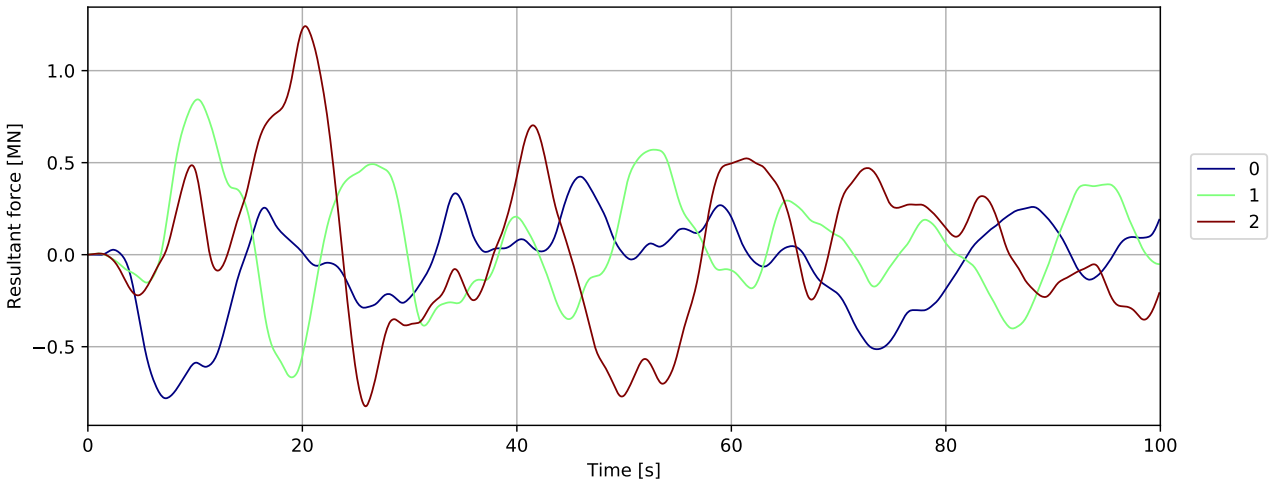

Figure 3.1011: Mooring force

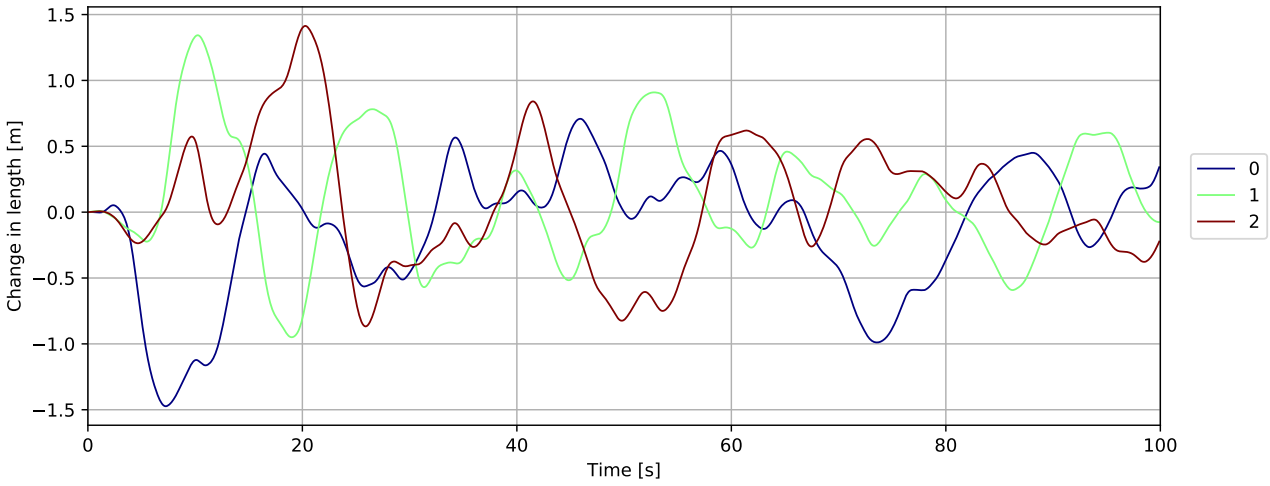

Figure 3.1012: Mooring displacement

3.23 PontoonA20 80deg

3.23.1 Overall response

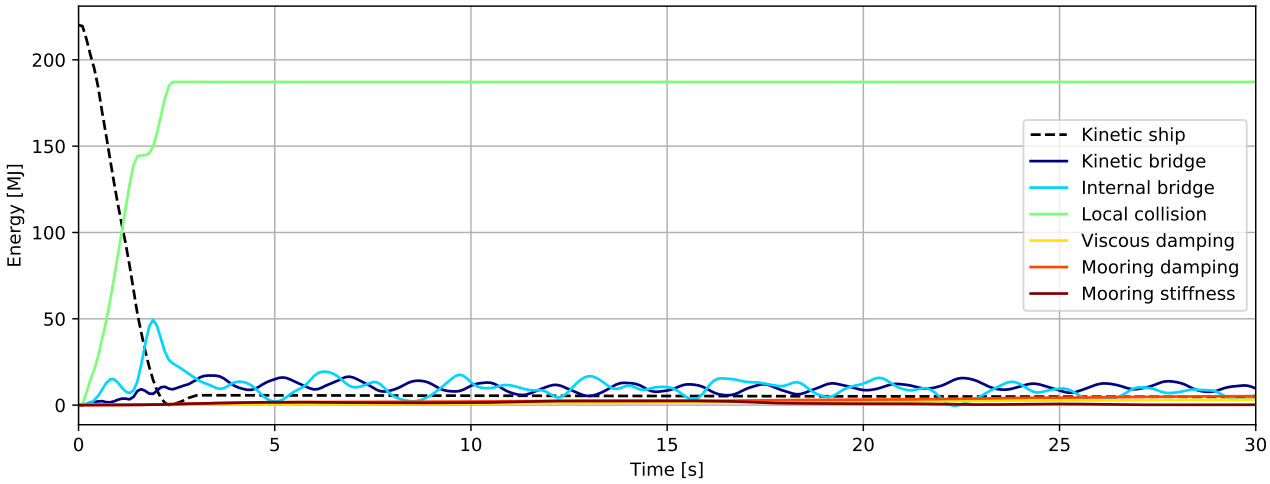

Figure 3.1013: Energy [MJ] - initial phase

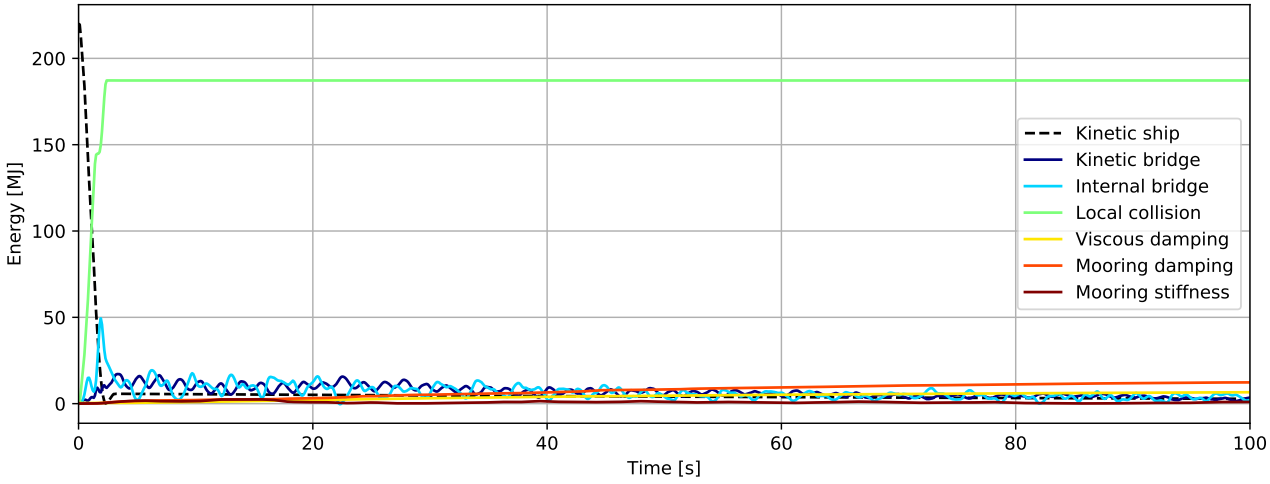

Figure 3.1014: Energy [MJ]

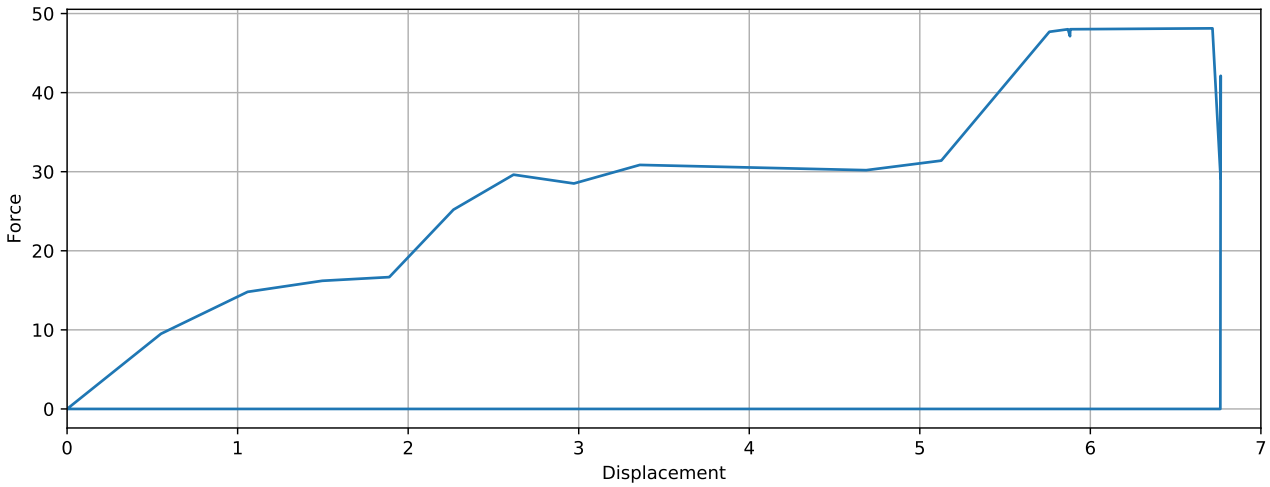

Figure 3.1015: Simulated local collision force-displacement

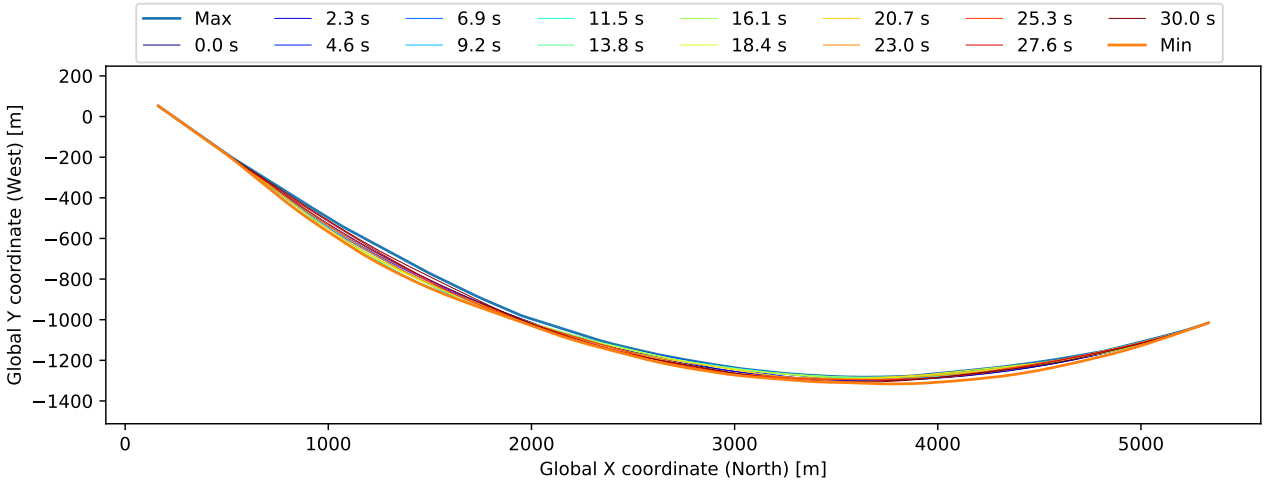

Figure 3.1016: Bridgegirder deflection (10x displacment scaling)

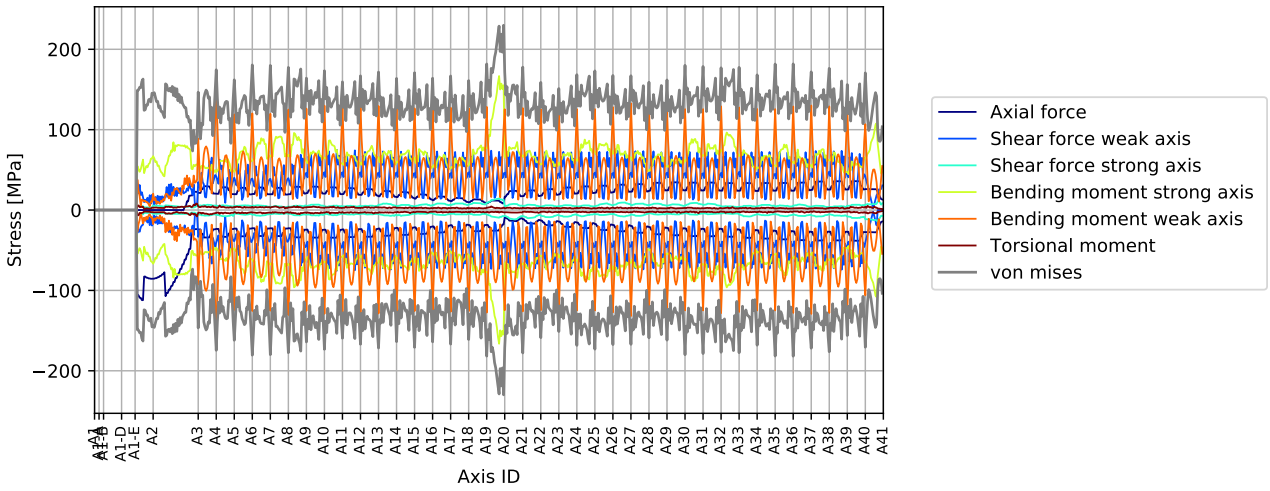

Figure 3.1017: Stress envelope from all force components

3.23.2 Envelope plots

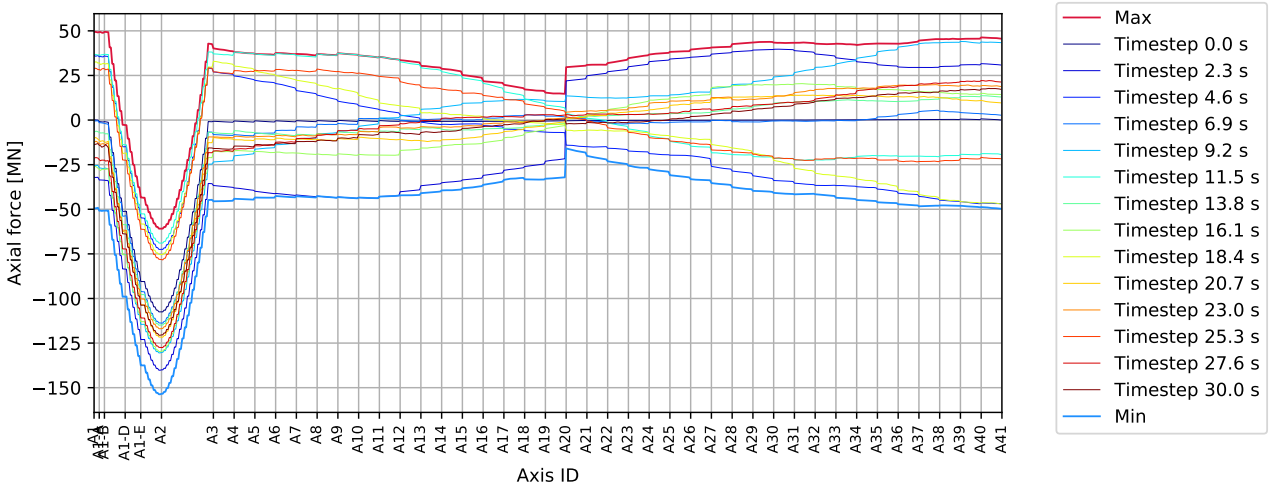

Figure 3.1018: P A20 80deg - bridgegirder : Axial force [MN]

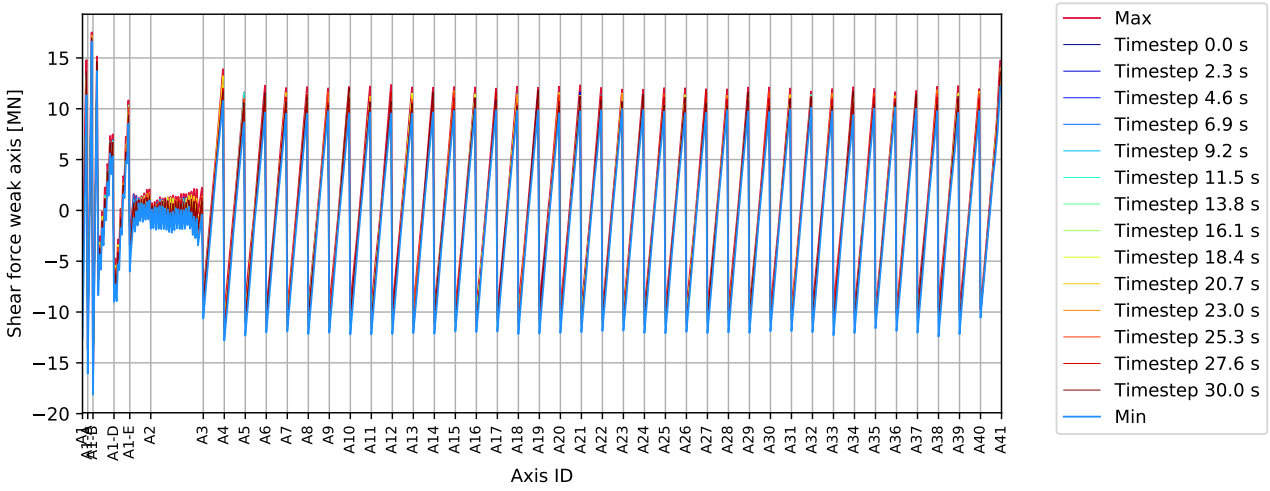

Figure 3.1019: P A20 80deg - bridgegirder : Shear force weak axis [MN]

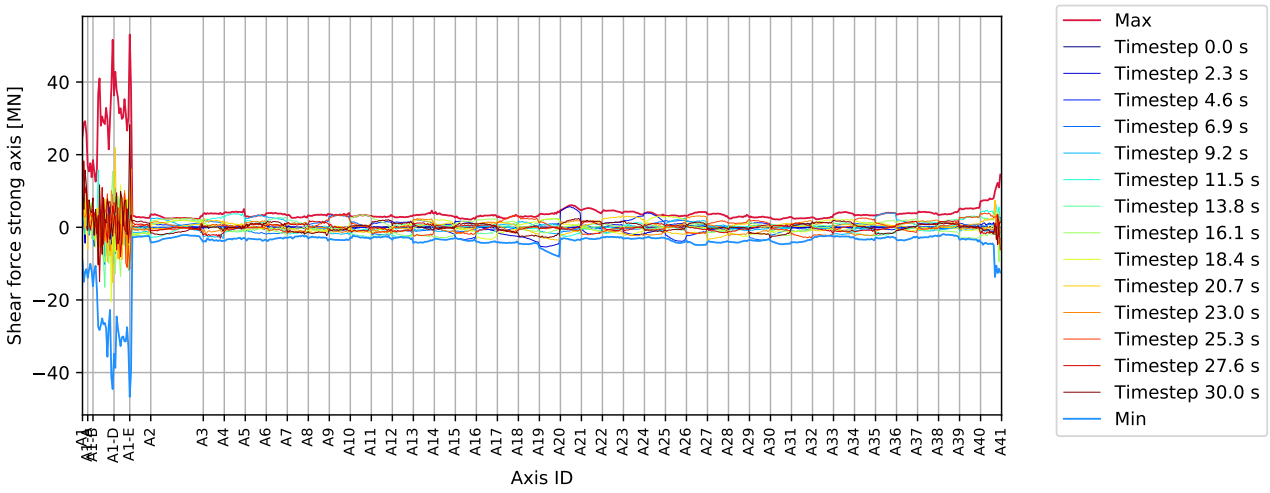

Figure 3.1020: P A20 80deg - bridgegirder : Shear force strong axis [MN]

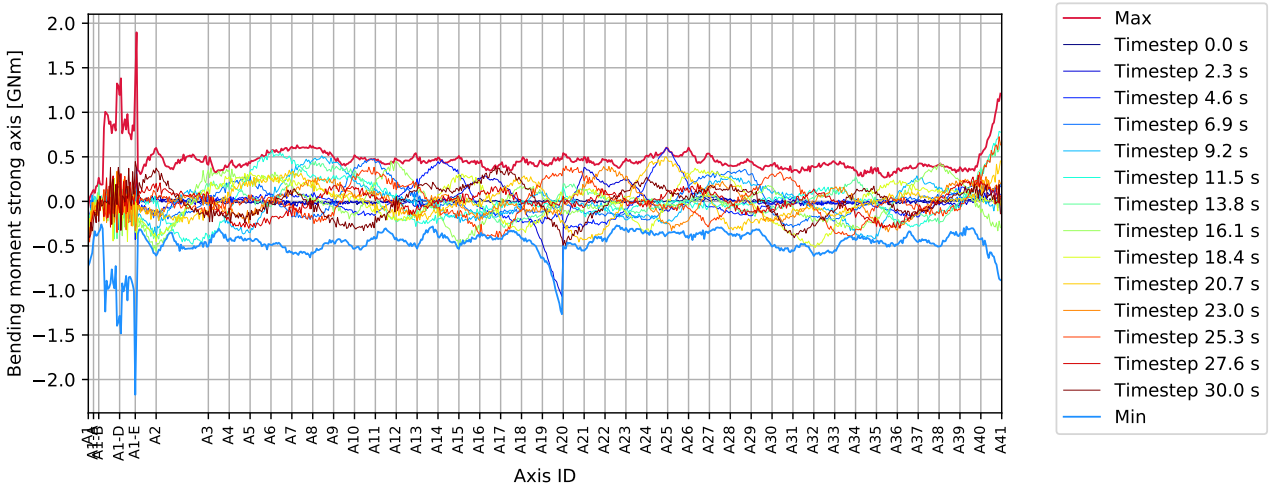

Figure 3.1021: P A20 80deg - bridgegirder : Bending moment strong axis [GNm]

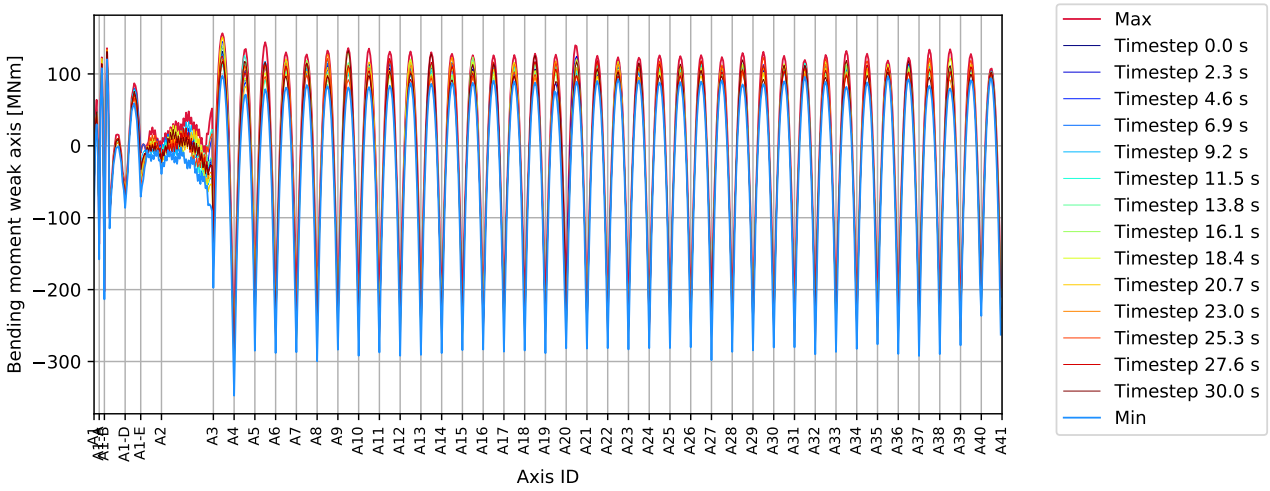

Figure 3.1022: P A20 80deg - bridgegirder : Bending moment weak axis [MNm]

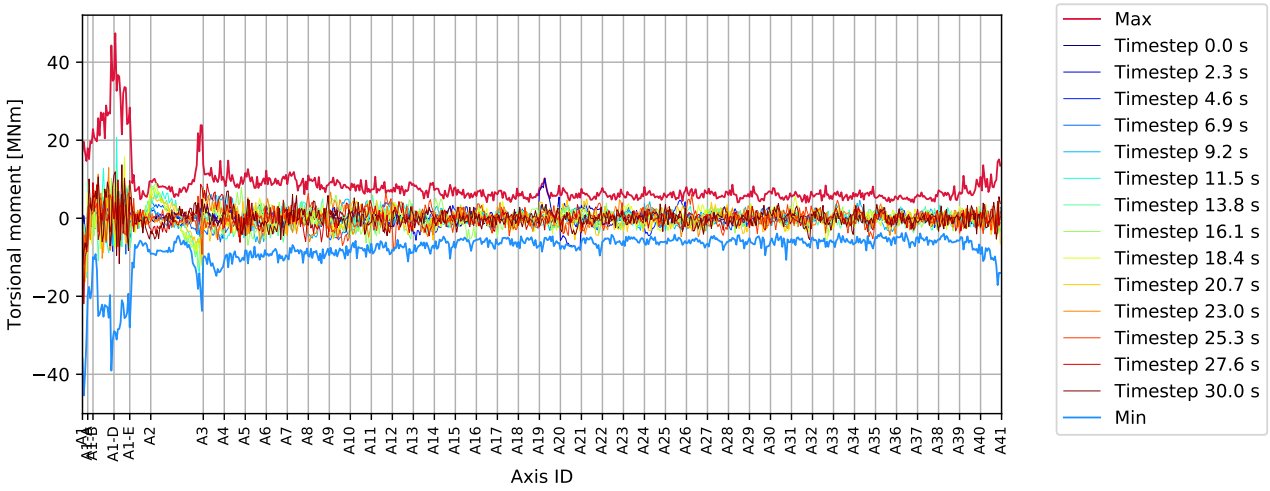

Figure 3.1023: P A20 80deg - bridgegirder : Torsional moment [MNm]

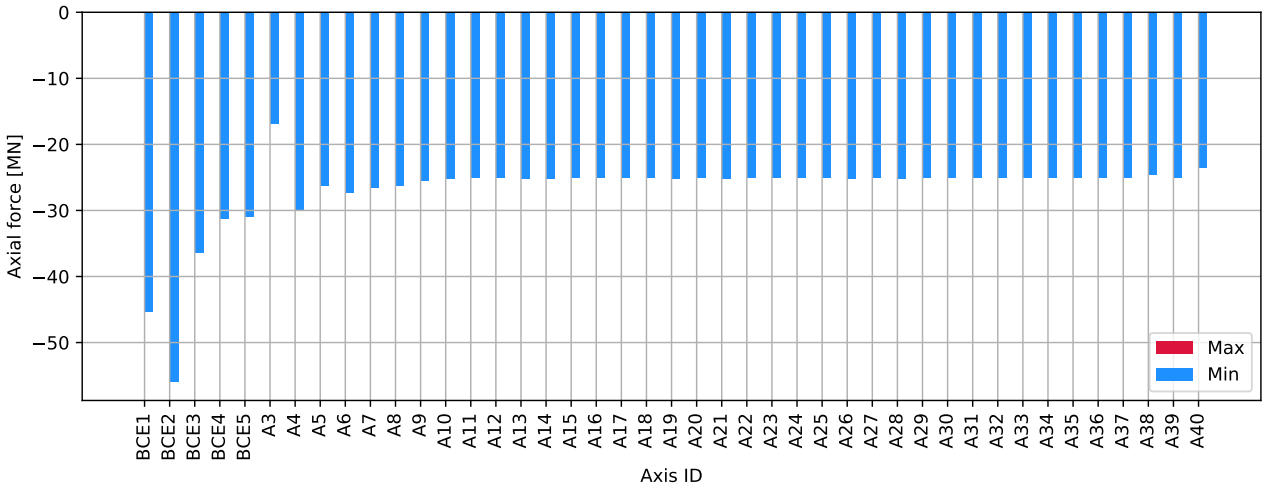

Figure 3.1024: P A20 80deg - columns bottom : Axial force [MN]

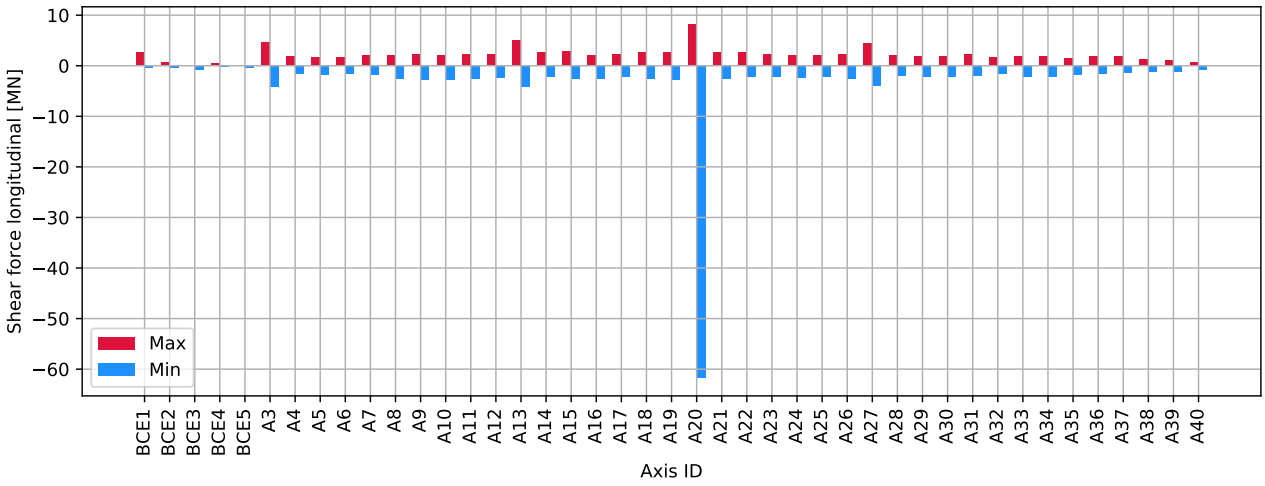

Figure 3.1025: P A20 80deg - columns bottom : Shear force longitudinal [MN]

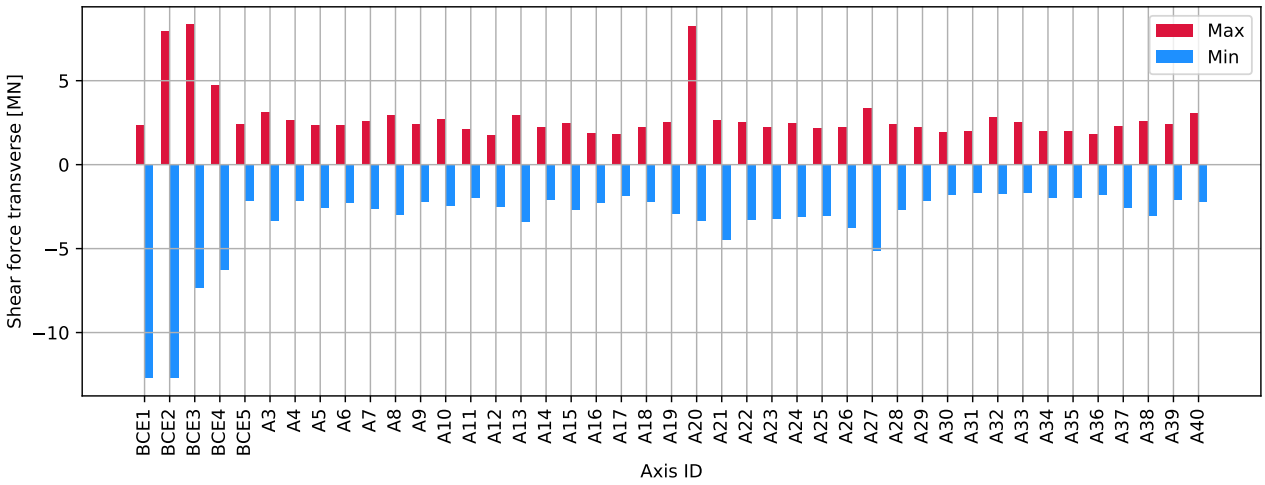

Figure 3.1026: P A20 80deg - columns bottom : Shear force transverse [MN]

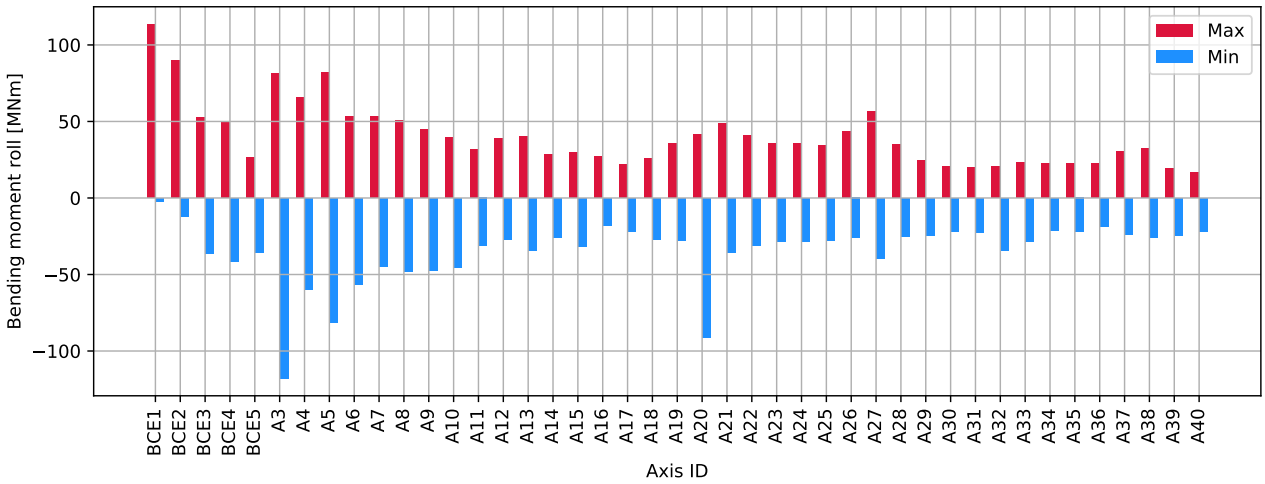

Figure 3.1027: P A20 80deg - columns bottom : Bending moment roll [MNm]

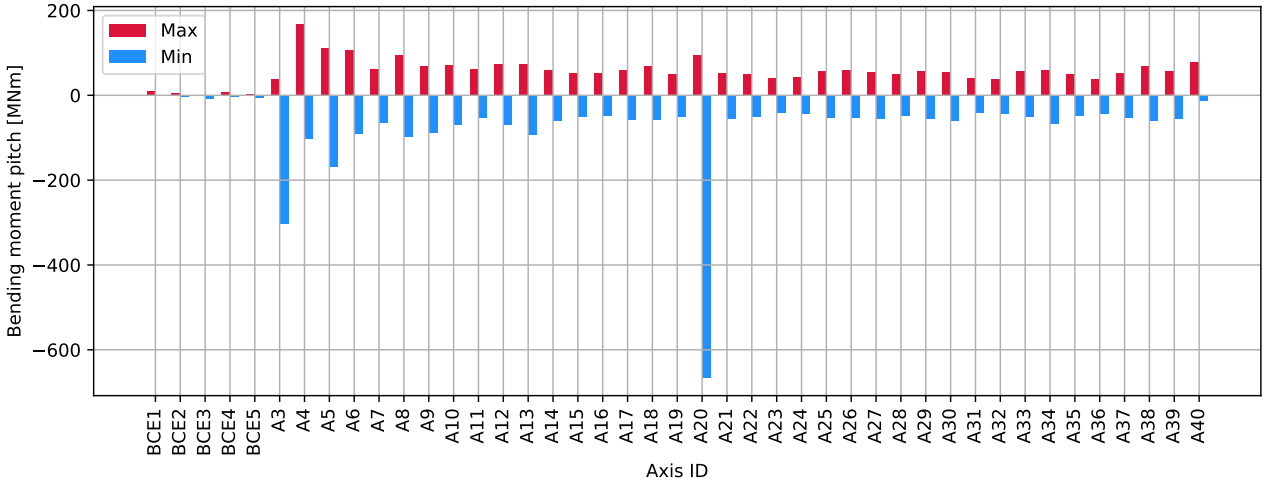

Figure 3.1028: P A20 80deg - columns bottom : Bending moment pitch [MNm]

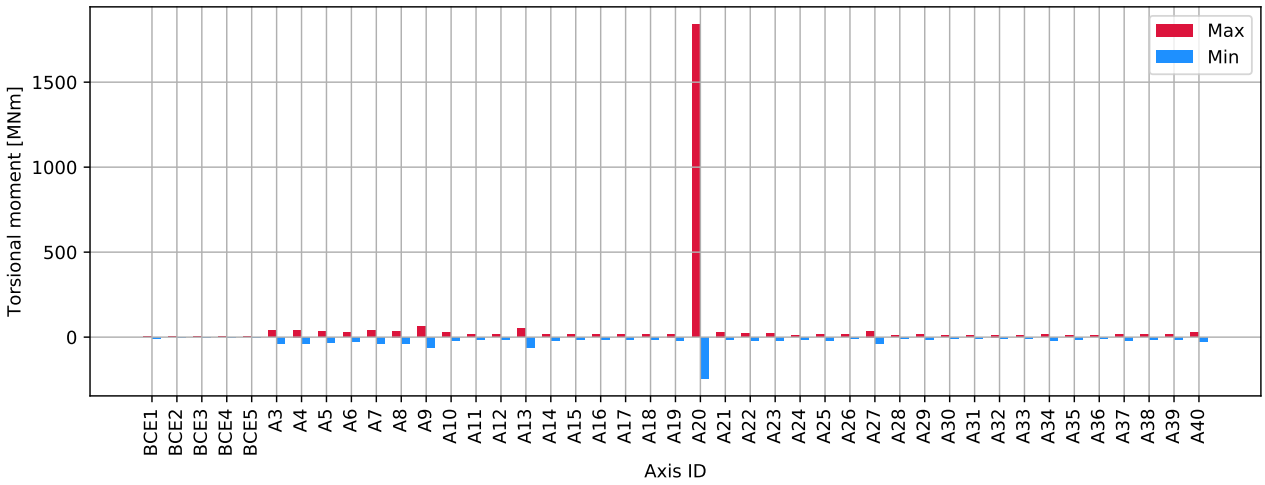

Figure 3.1029: P A20 80deg - columns bottom : Torsional moment [MNm]

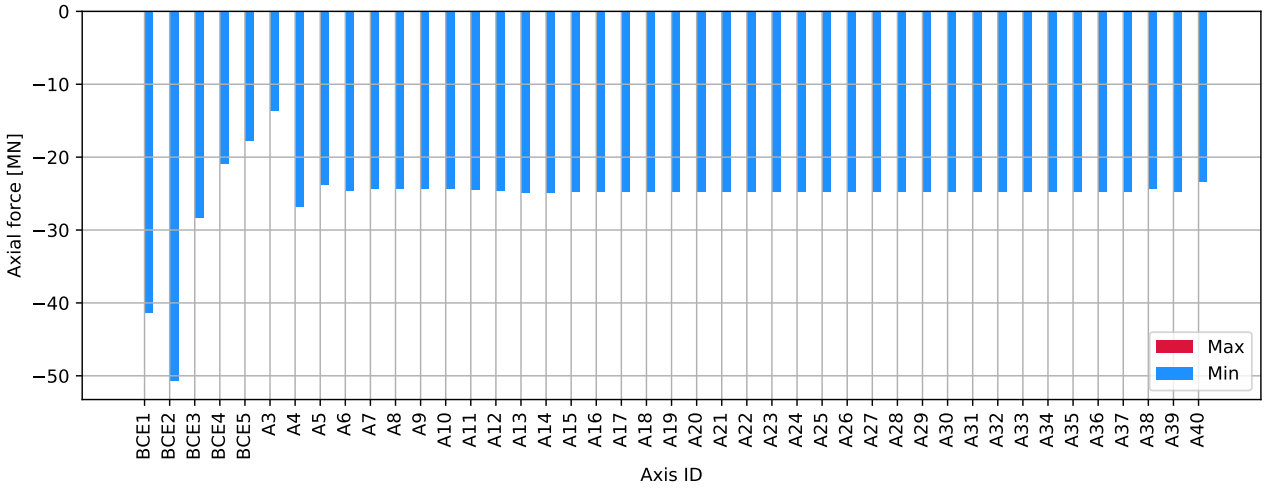

Figure 3.1030: P A20 80deg - columns top : Axial force [MN]

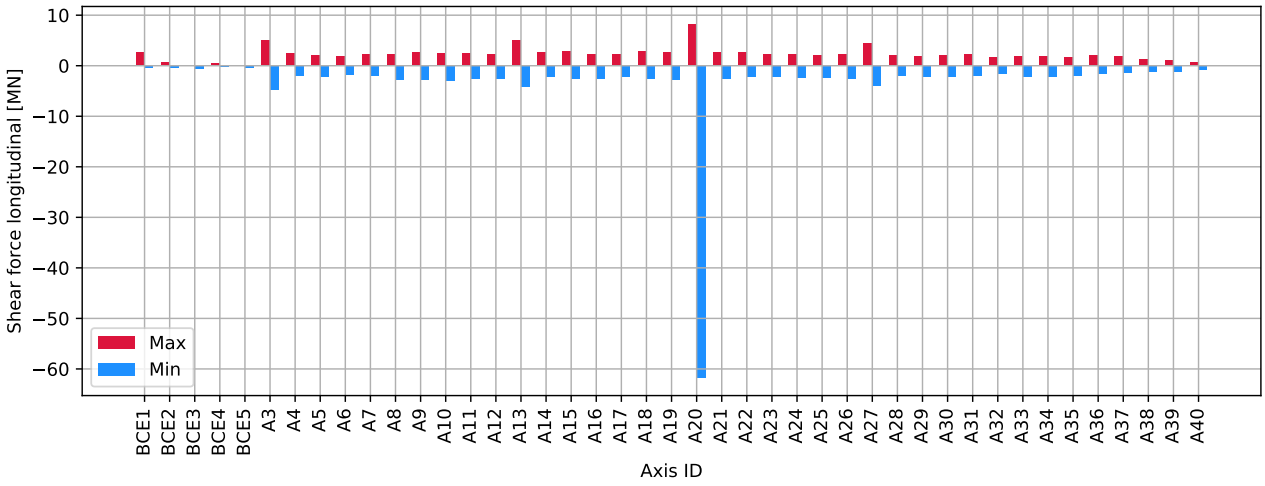

Figure 3.1031: P A20 80deg - columns top : Shear force longitudinal [MN]

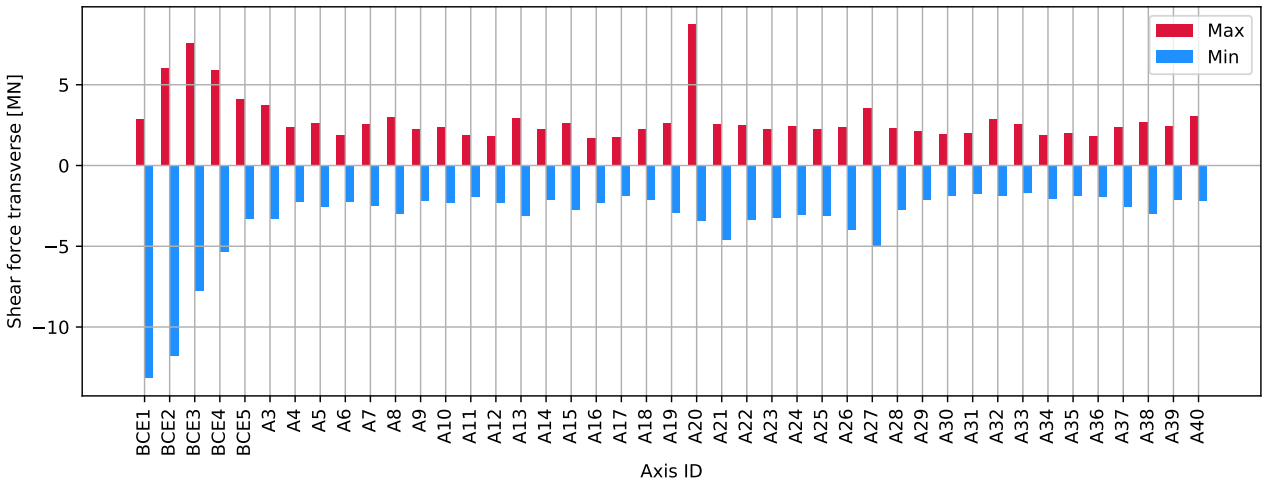

Figure 3.1032: P A20 80deg - columns top : Shear force transverse [MN]

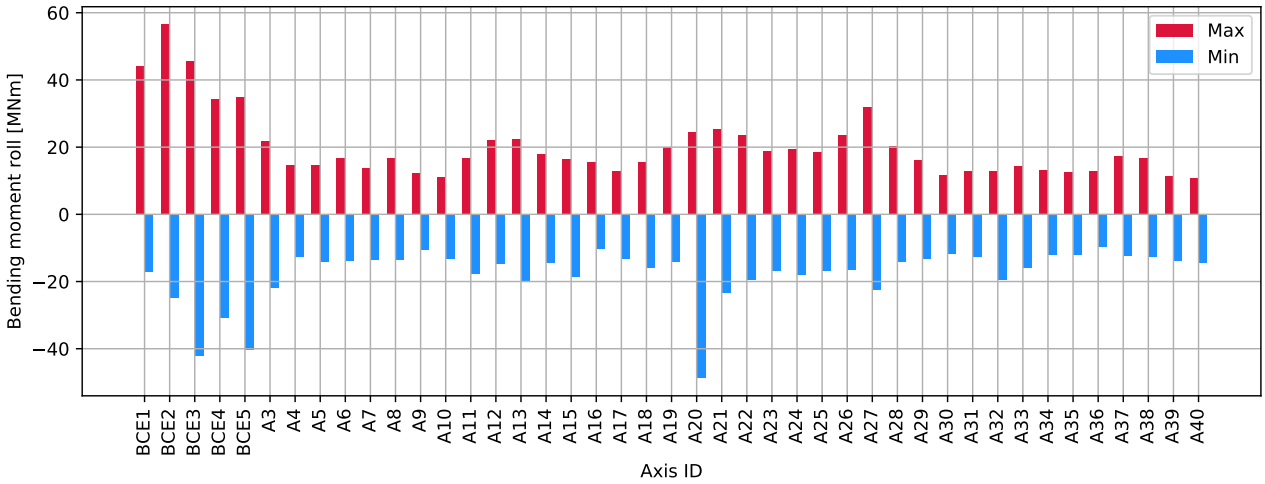

Figure 3.1033: P A20 80deg - columns top : Bending moment roll [MNm]

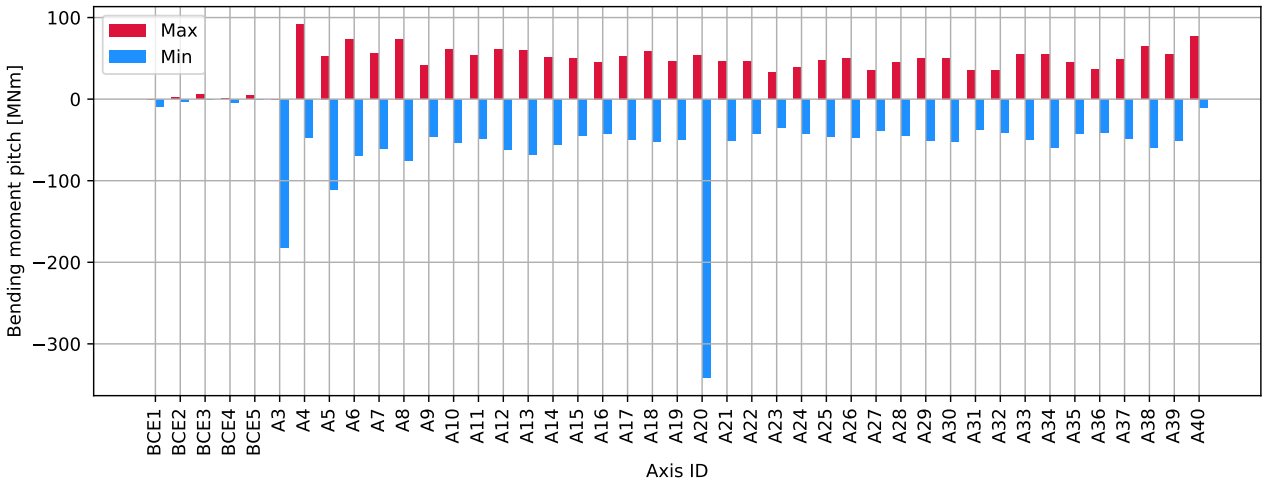

Figure 3.1034: P A20 80deg - columns top : Bending moment pitch [MNm]

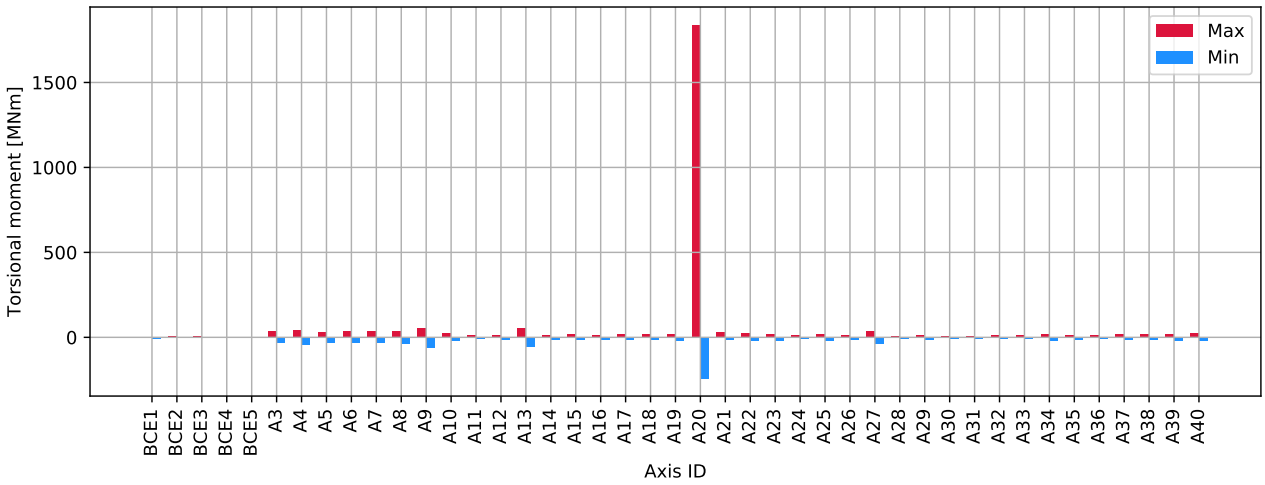

Figure 3.1035: P A20 80deg - columns top : Torsional moment [MNm]

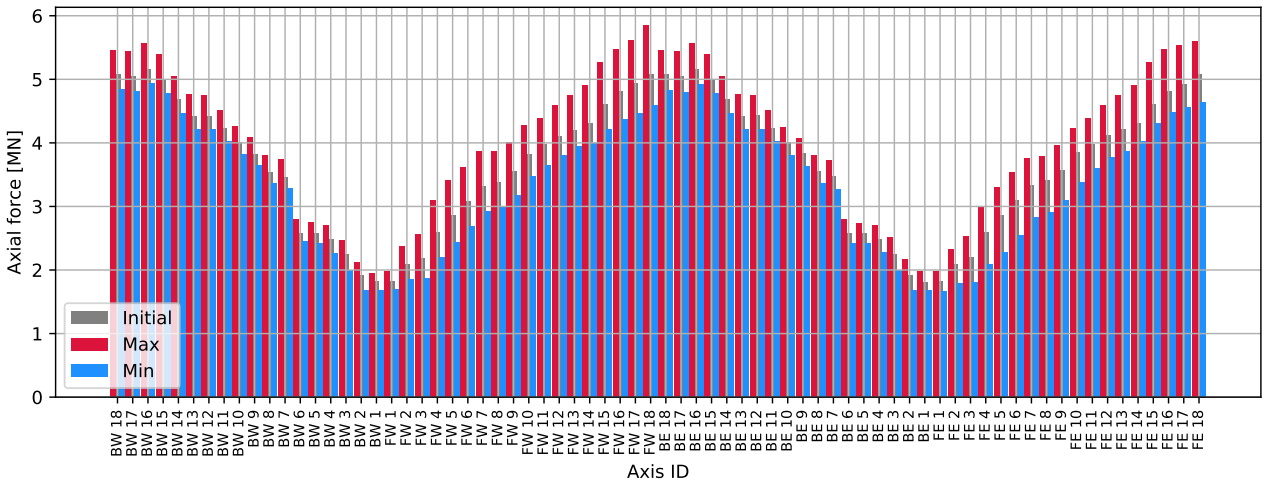

Figure 3.1036: P A20 80deg - cables : Axial force [MN]

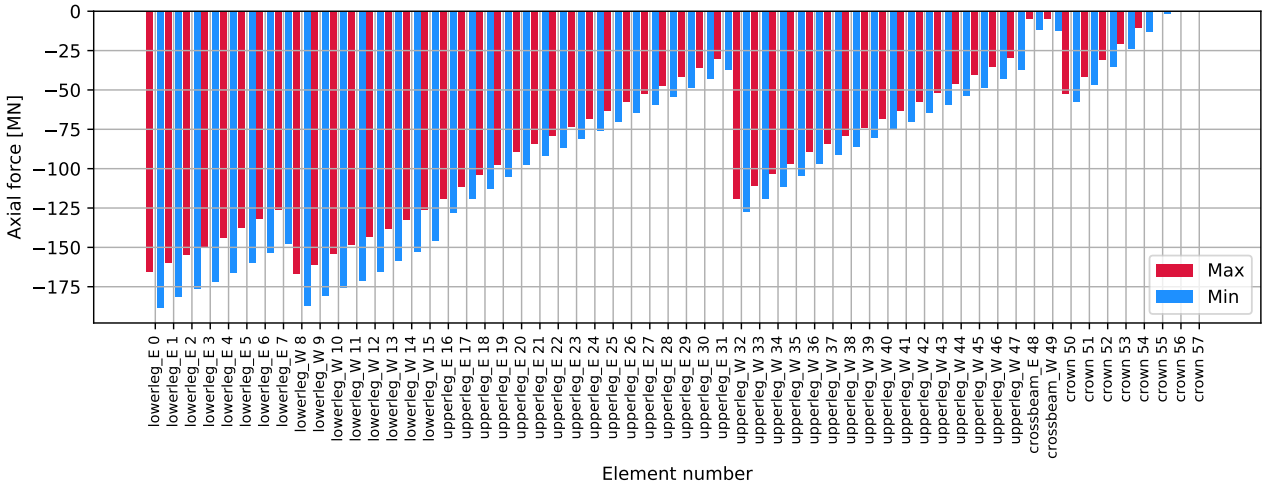

Figure 3.1037: P A20 80deg - tower: Axial force [MN]

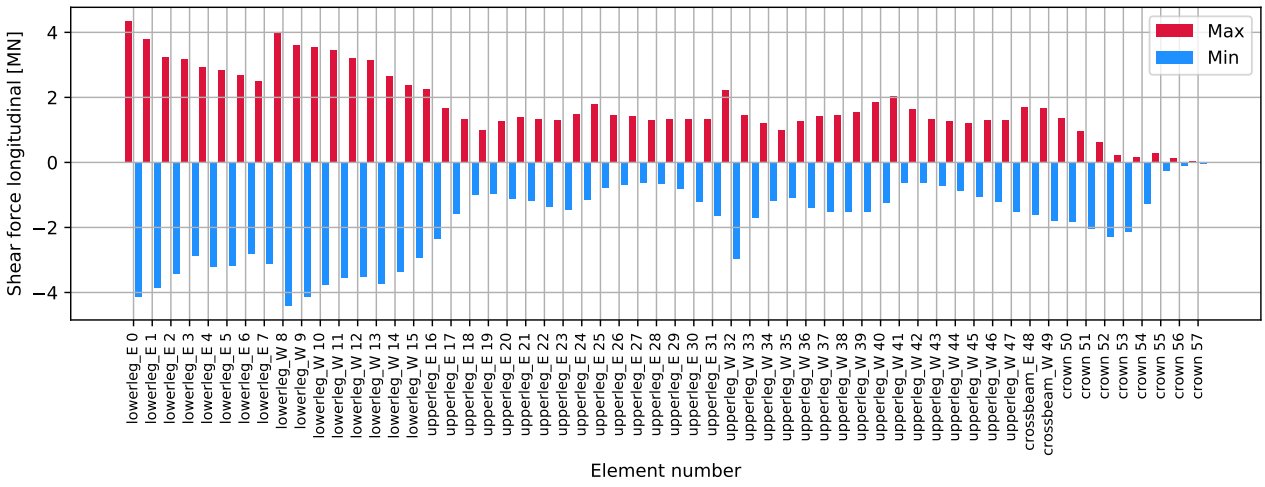

Figure 3.1038: P A20 80deg - tower: Shear force longitudinal [MN]

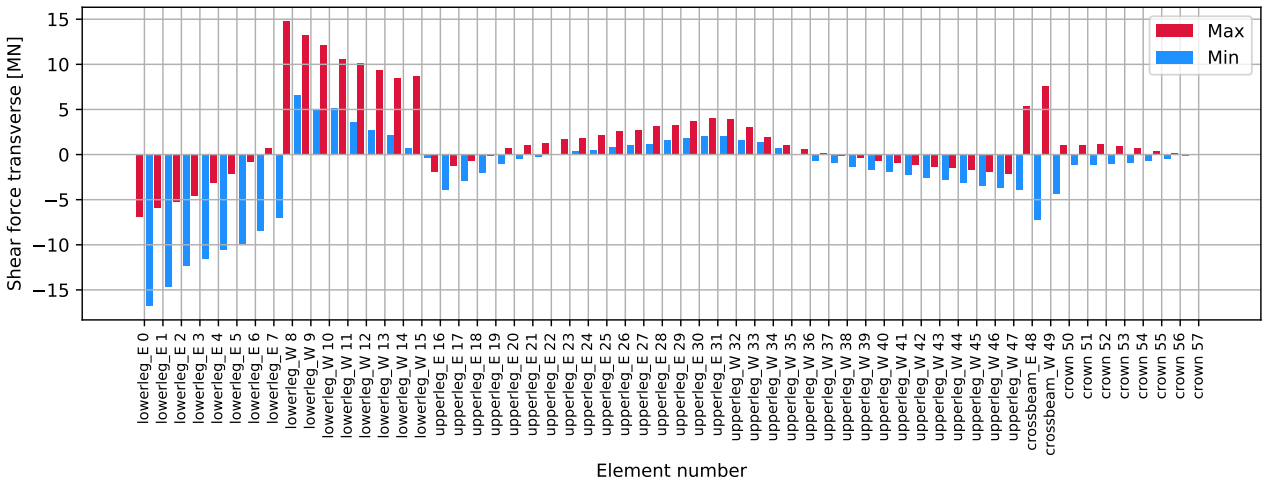

Figure 3.1039: P A20 80deg - tower: Shear force transverse [MN]

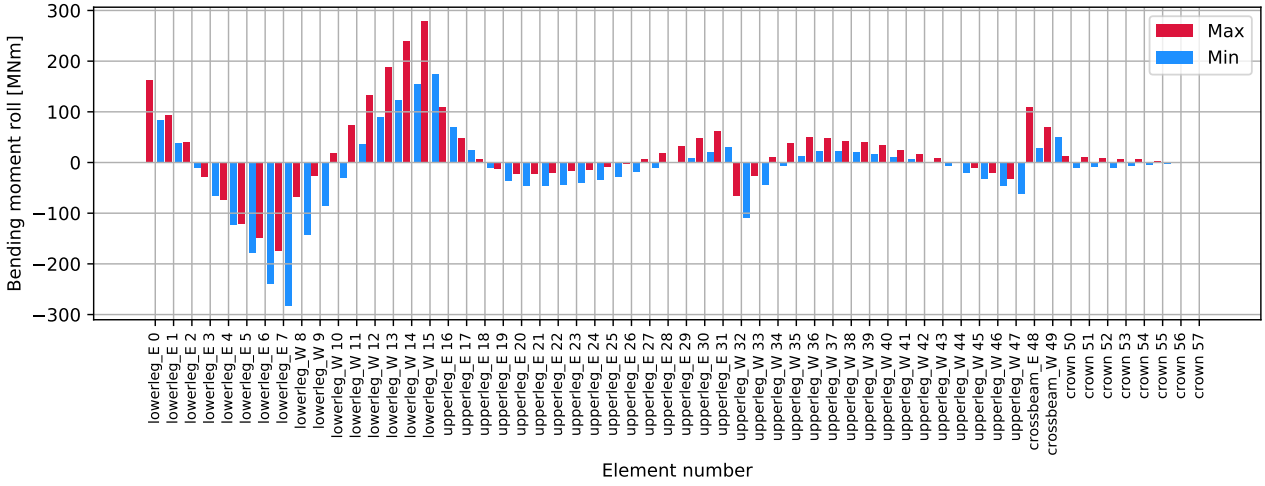

Figure 3.1040: P A20 80deg - tower: Bending moment roll [MNm]

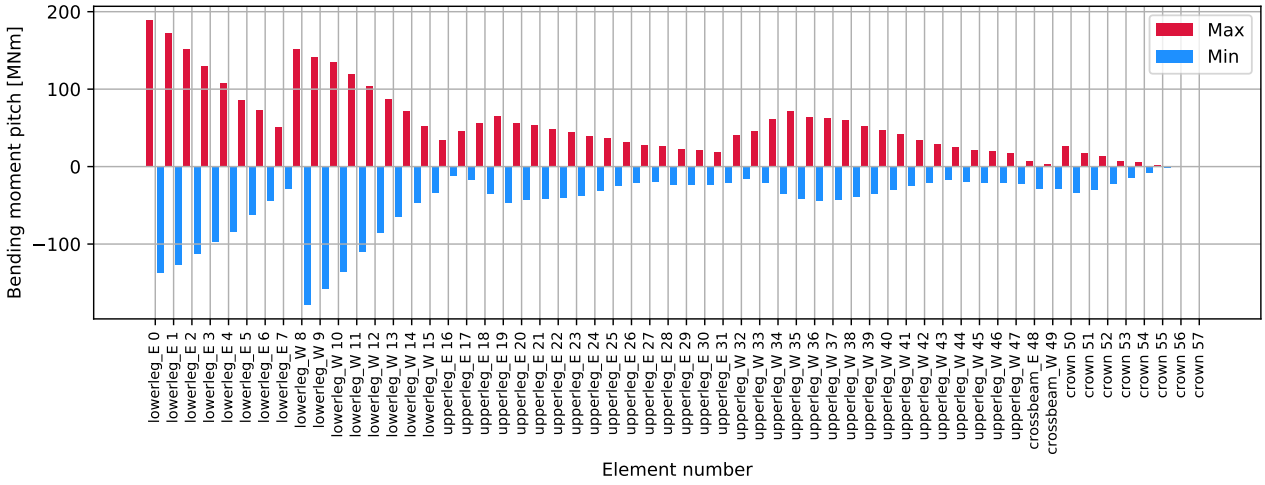

Figure 3.1041: P A20 80deg - tower: Bending moment pitch [MNm]

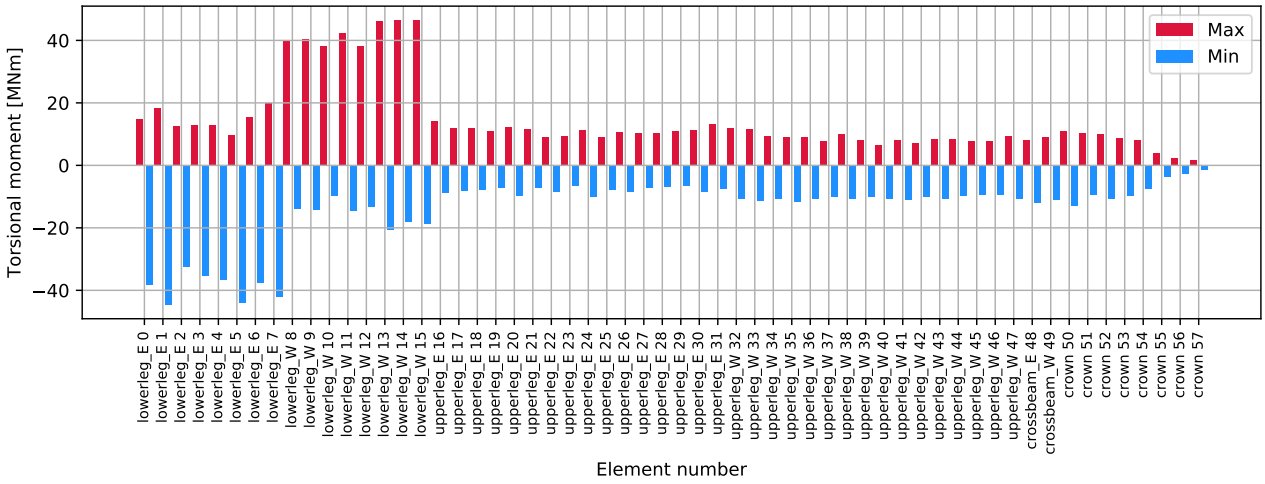

Figure 3.1042: P A20 80deg - tower: Torsional moment [MNm]

3.23.3 Time series

Note : Time series are filtered using a Saviotzky-Golay filter for increased readability of the time history plots. Hence, maximum values that occur due to a rapid vibration are not shown in the plots. For maximum values, refer to the tabulated data.
All elements are numbered from South to North, bottom to top

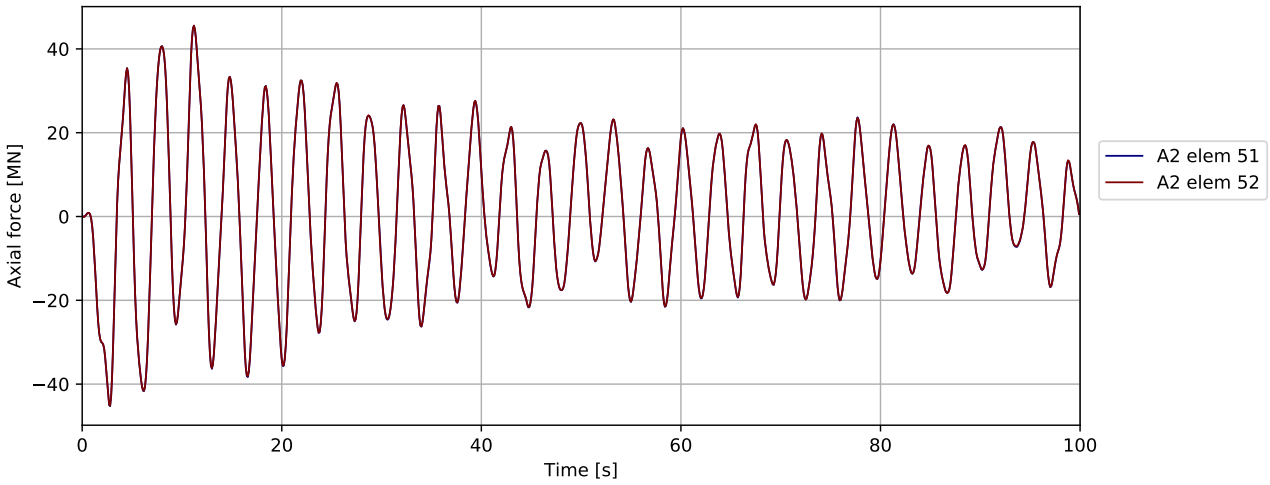

Figure 3.1043: P A20 80deg - bridgegirder @ pylon: Axial force [MN]

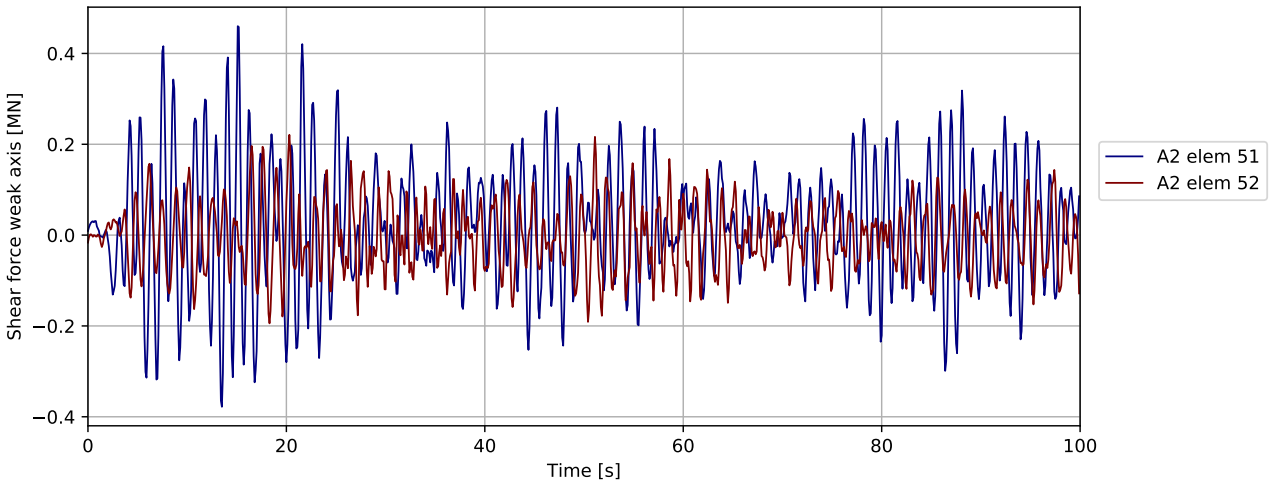

Figure 3.1044: P A20 80deg - bridgegirder @ pylon: Shear force weak axis [MN]

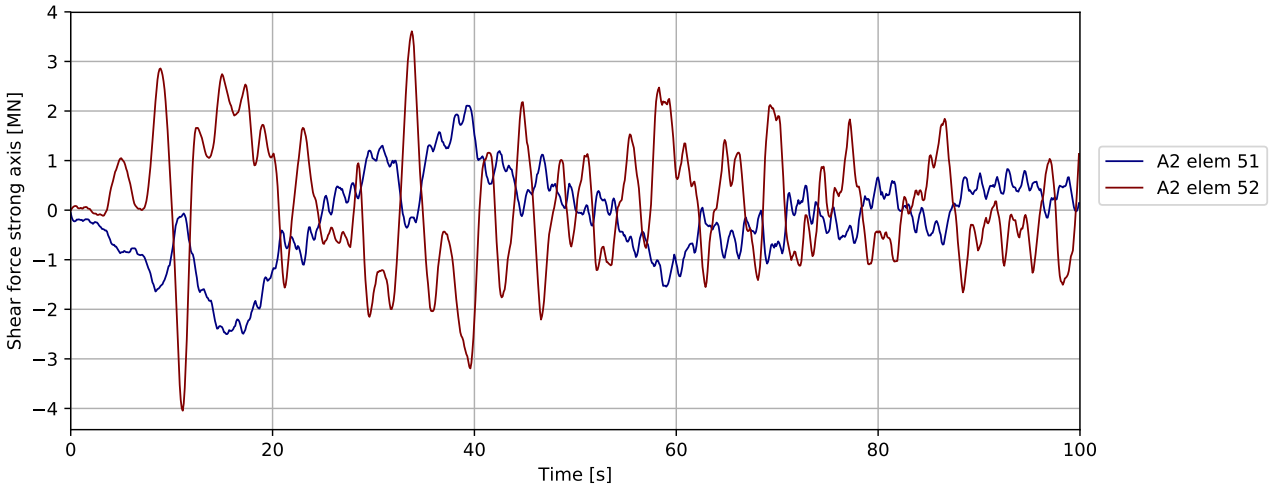

Figure 3.1045: P A20 80deg - bridgegirder @ pylon: Shear force strong axis [MN]

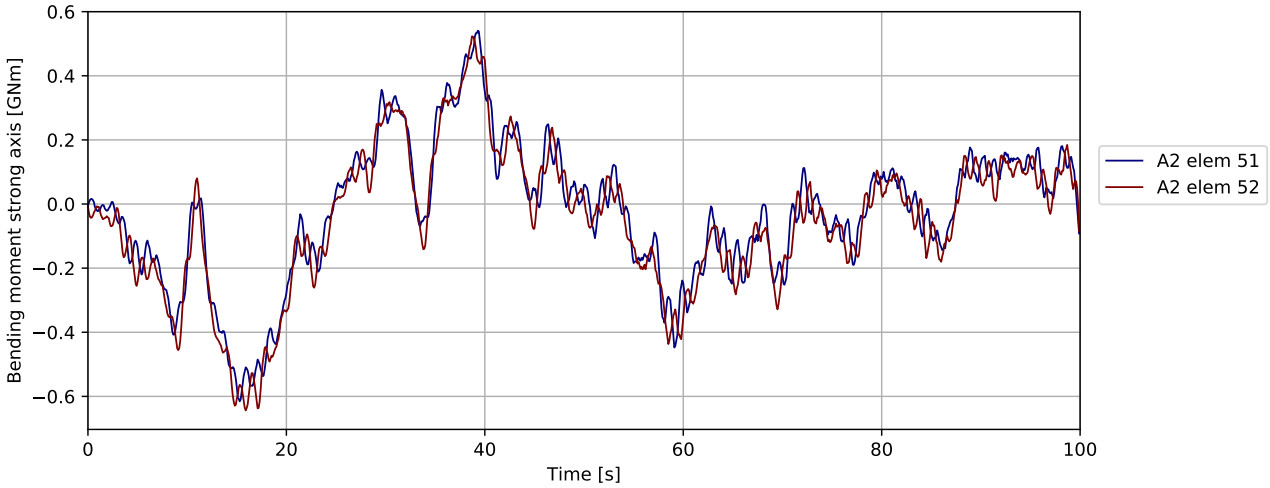

Figure 3.1046: P A20 80deg - bridgegirder @ pylon: Bending moment strong axis [GNm]

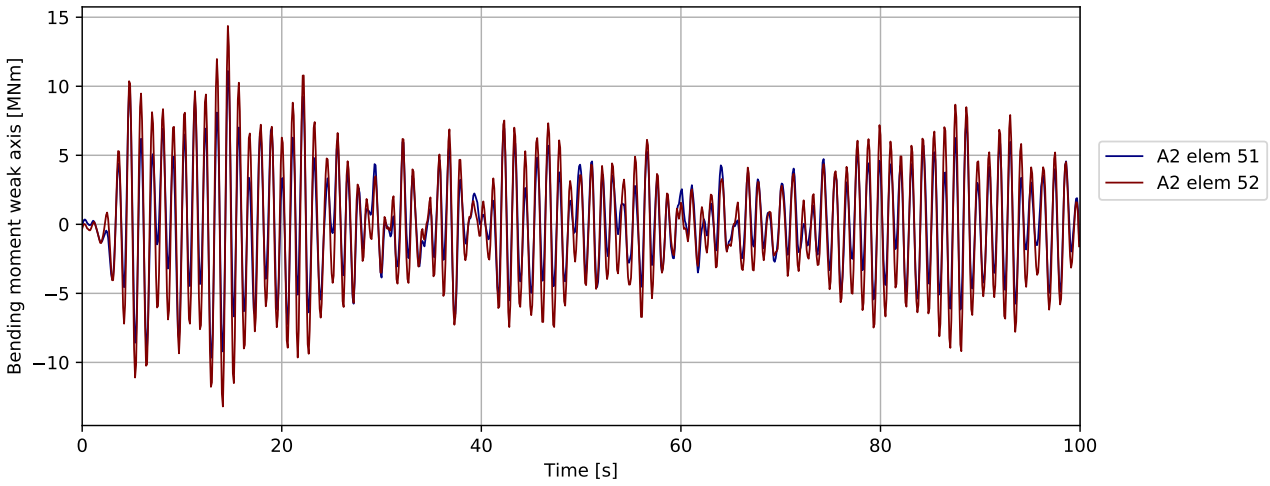

Figure 3.1047: P A20 80deg - bridgegirder @ pylon: Bending moment weak axis [MNm]

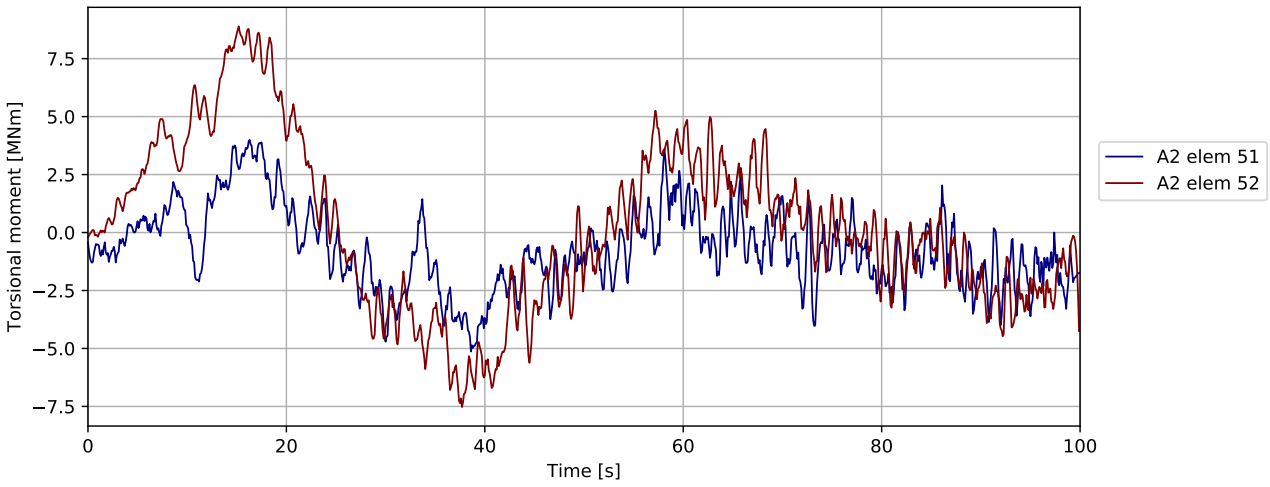

Figure 3.1048: P A20 80deg - bridgegirder @ pylon: Torsional moment [MNm]

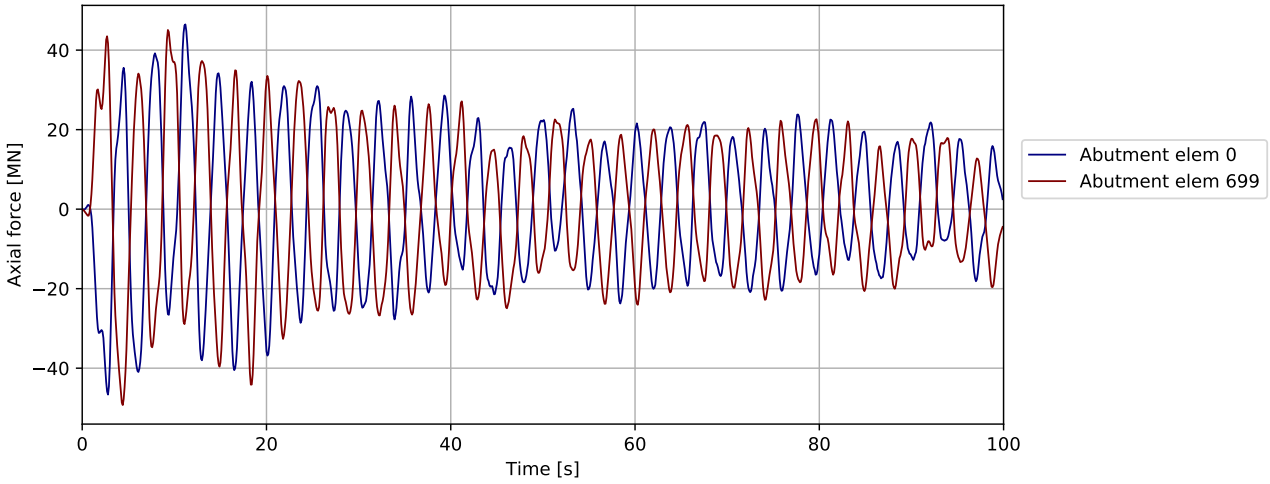

Figure 3.1049: P A20 80deg - bridgegirder @abutments: Axial force [MN]

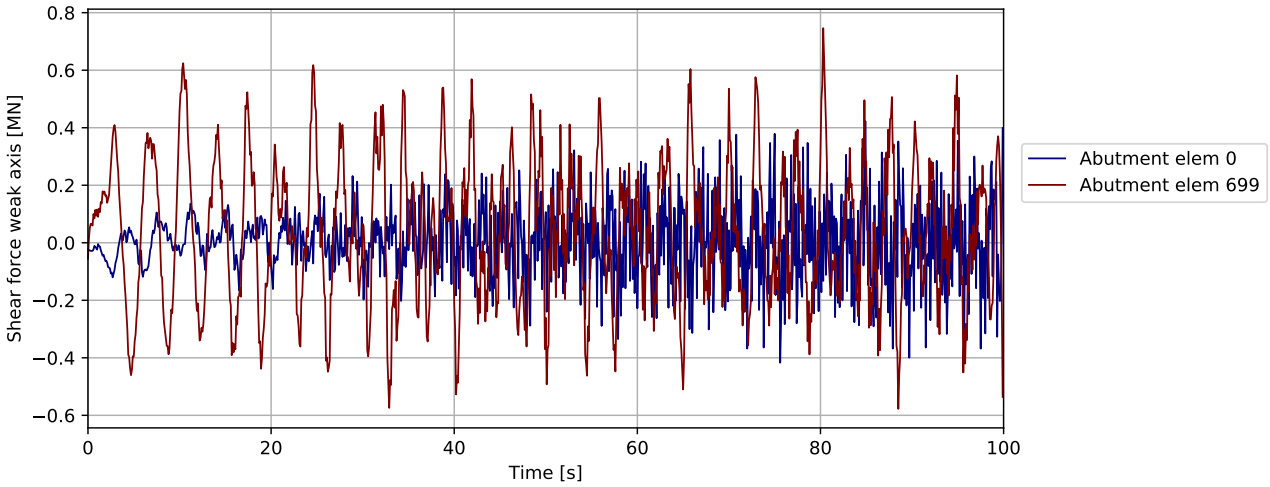

Figure 3.1050: P A20 80deg - bridgegirder @abutments: Shear force weak axis [MN]

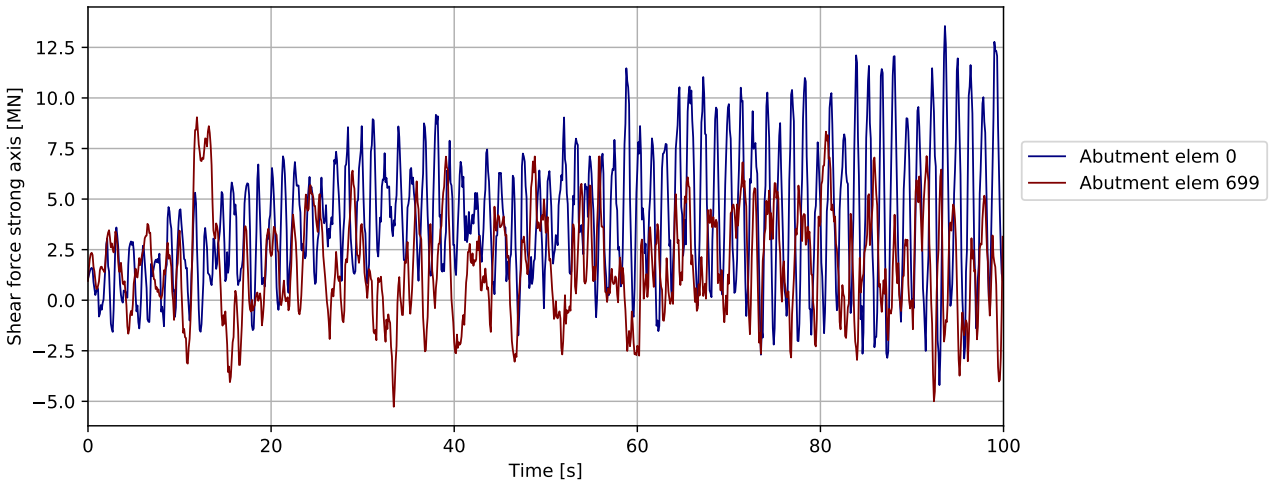

Figure 3.1051: P A20 80deg - bridgegirder @abutments: Shear force strong axis [MN]

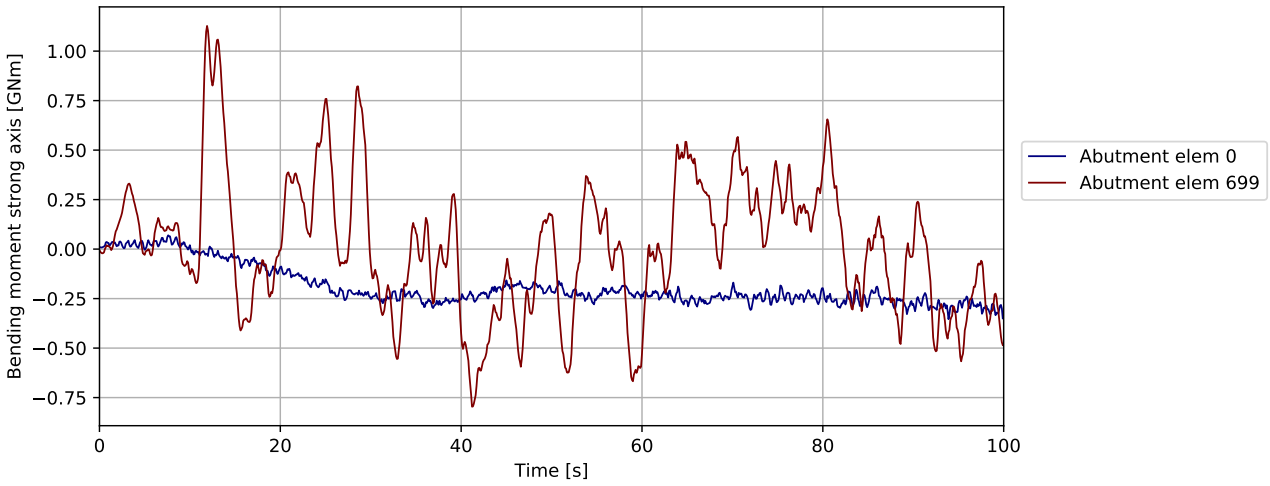

Figure 3.1052: P A20 80deg - bridgegirder @abutments: Bending moment strong axis [GNm]

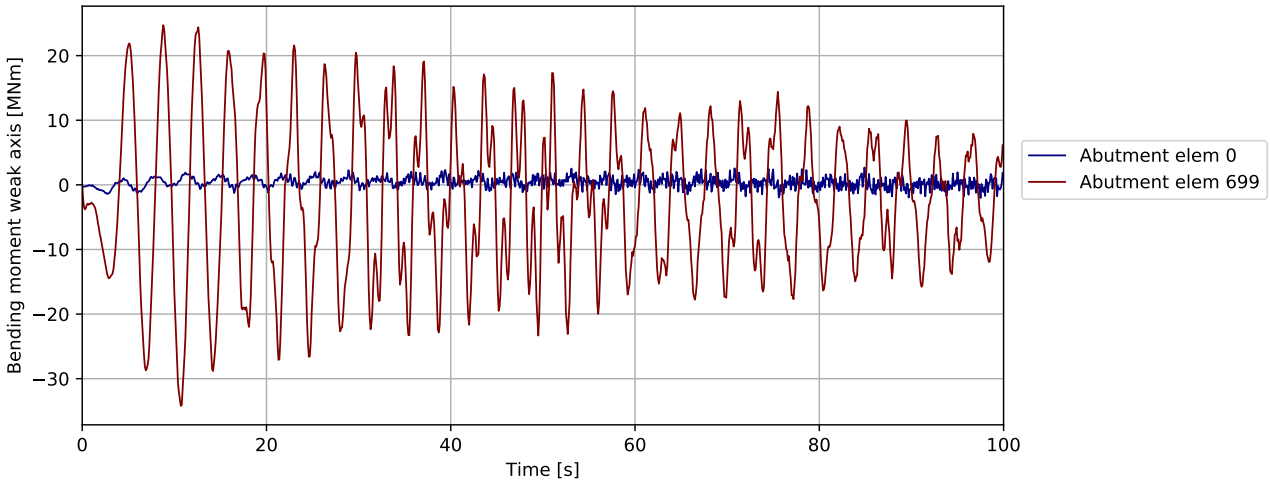

Figure 3.1053: P A20 80deg - bridgegirder @abutments: Bending moment weak axis [MNm]

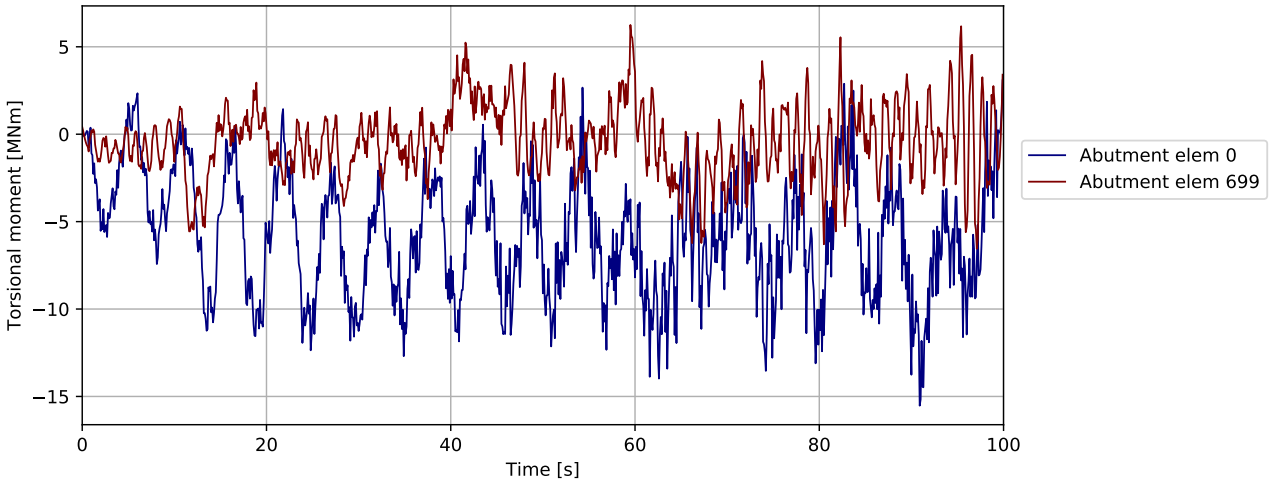

Figure 3.1054: P A20 80deg - bridgegirder @abutments: Torsional moment [MNm]

Note : Compressive spring force is negative

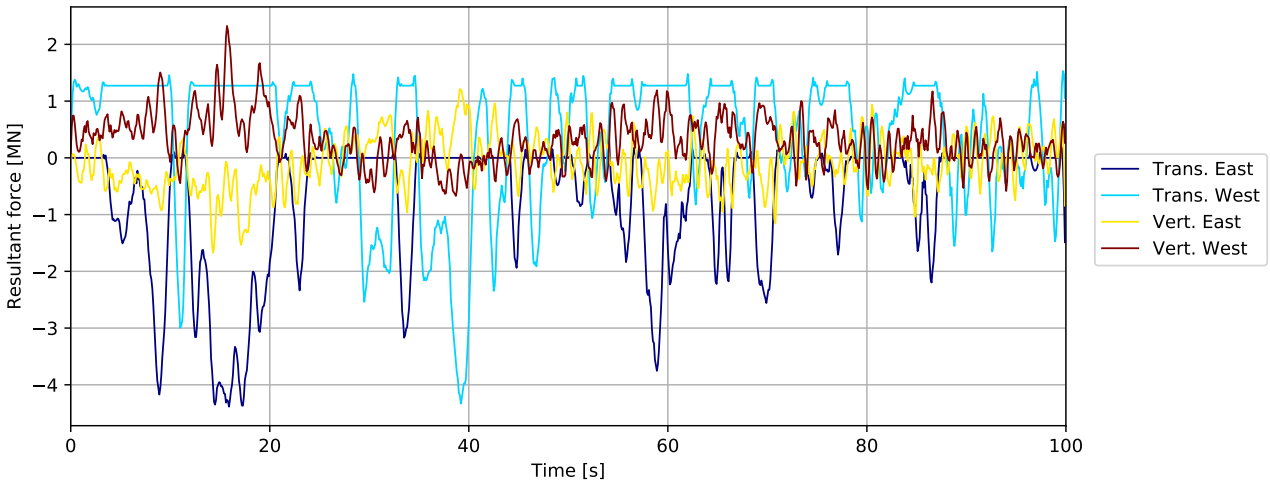

Figure 3.1055: P A20 80deg - bridgegirder supports in tower: Resultant force [MN]

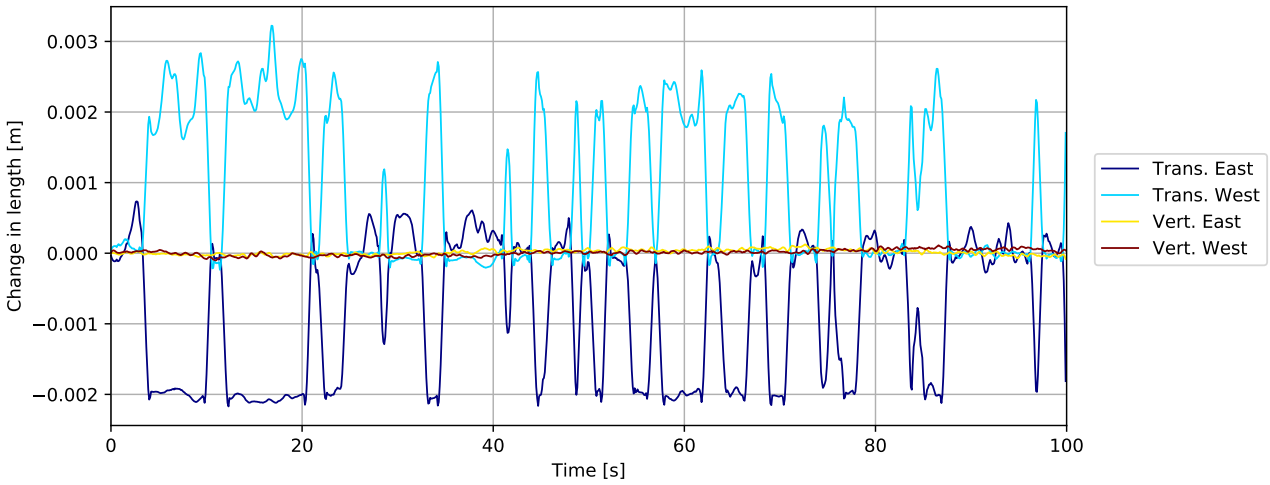

Figure 3.1056: P A20 80deg - bridgegirder supports in tower: Change in length [m]

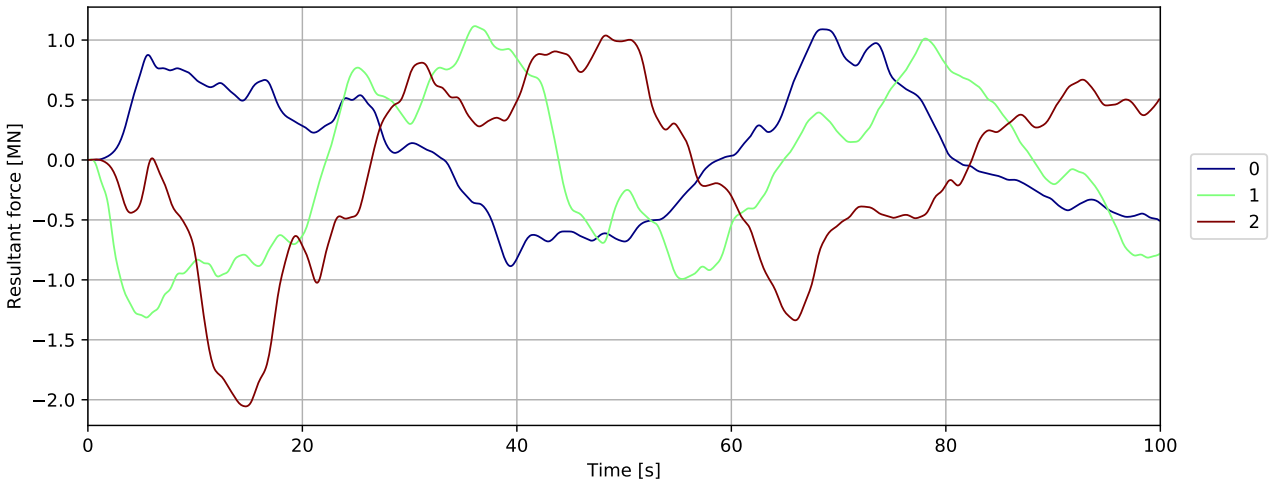

Figure 3.1057: Mooring force

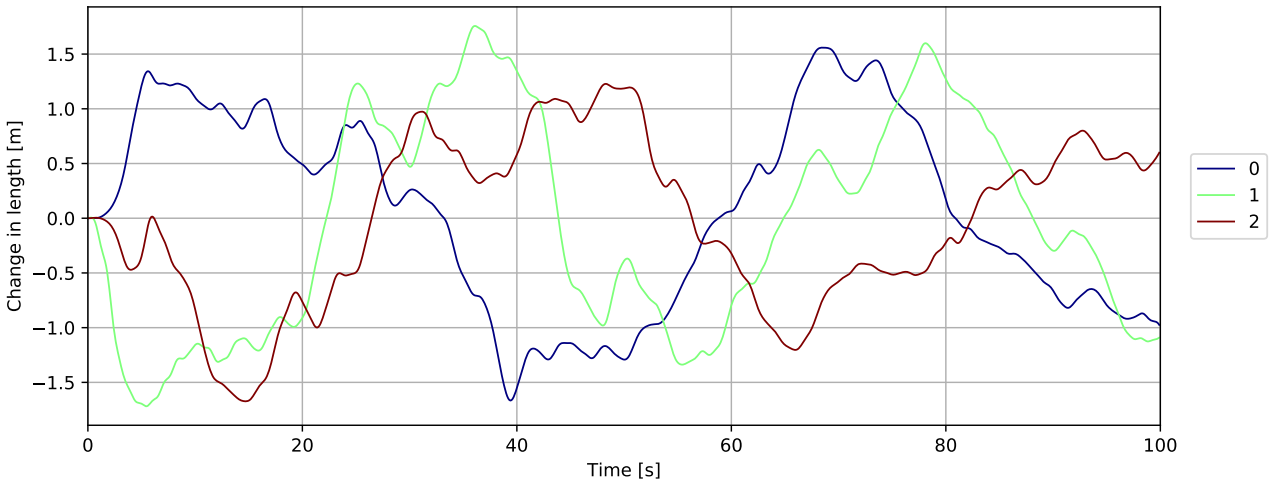

Figure 3.1058: Mooring displacement

3.24 PontoonA30 80deg

3.24.1 Overall response

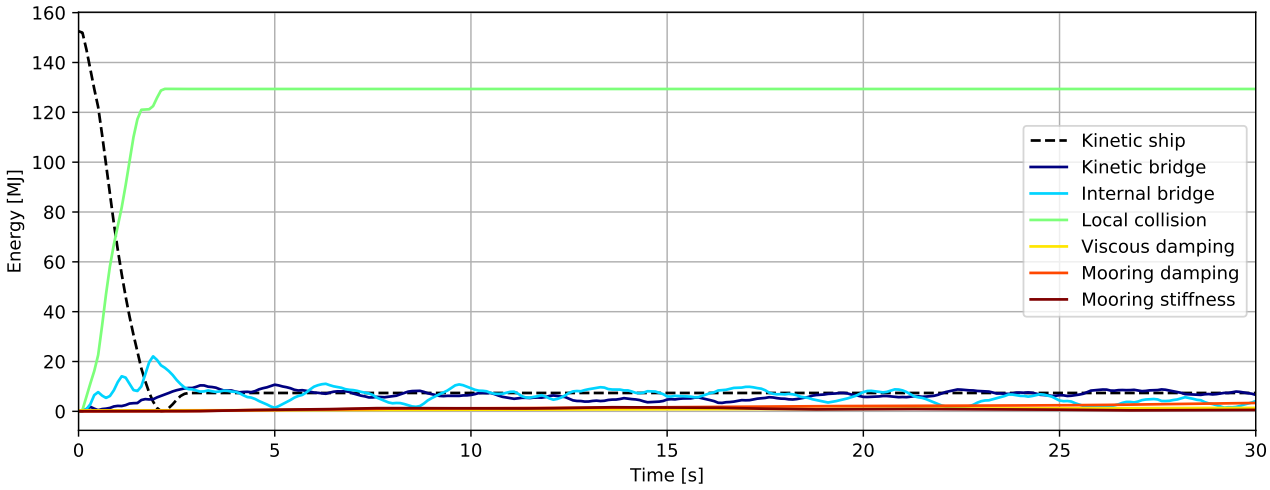

Figure 3.1059: Energy [MJ] - initial phase

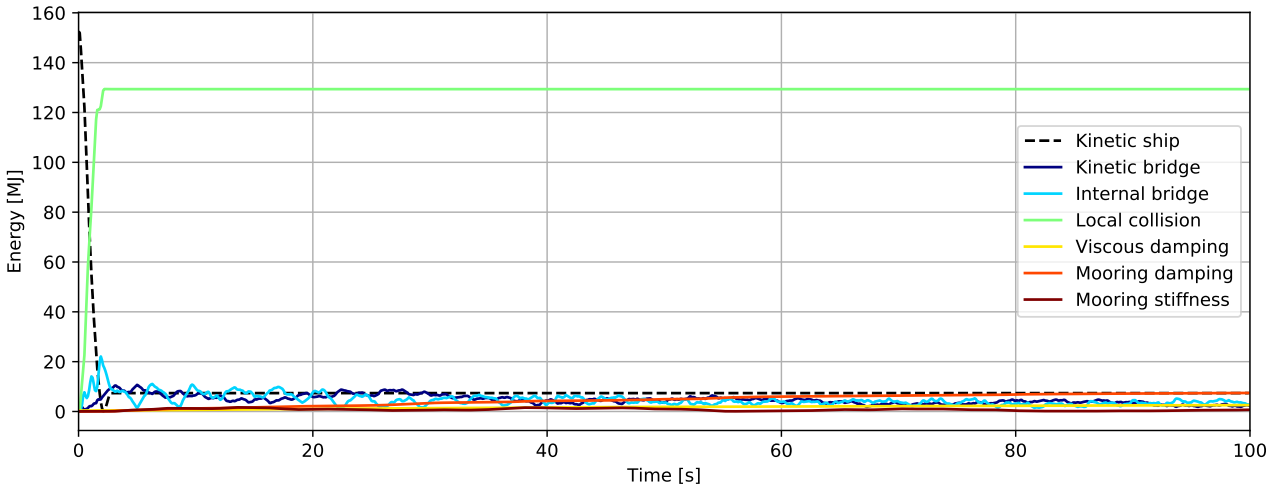

Figure 3.1060: Energy [MJ]

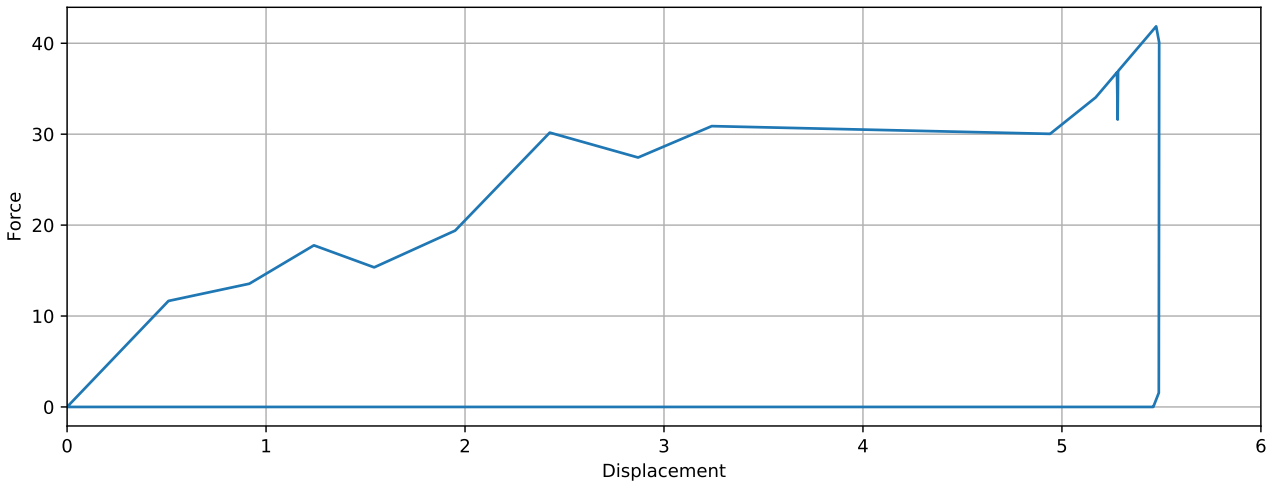

Figure 3.1061: Simulated local collision force-displacement

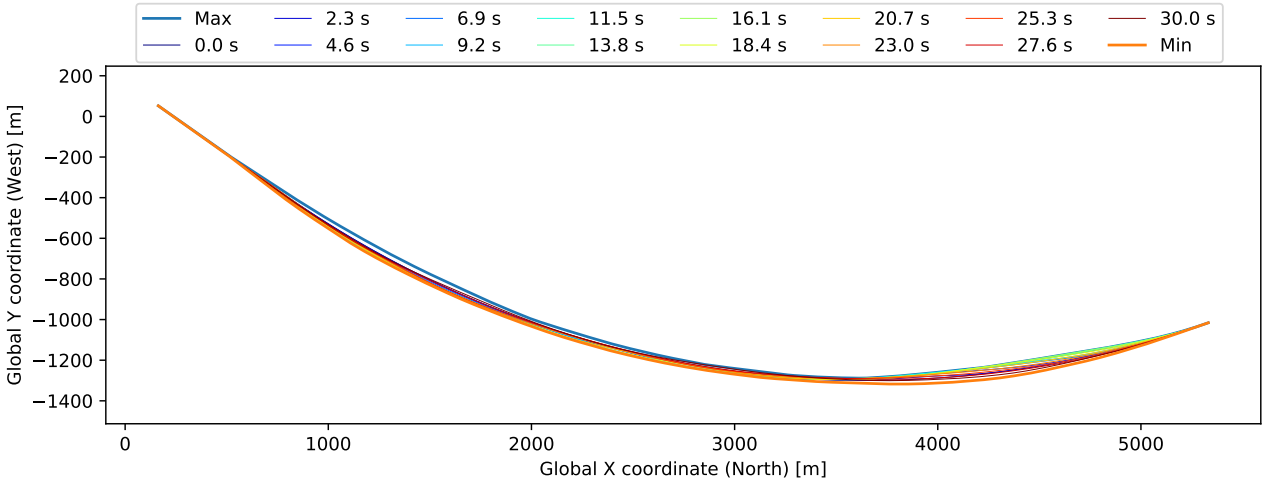

Figure 3.1062: Bridgegirder deflection (10x displacment scaling)

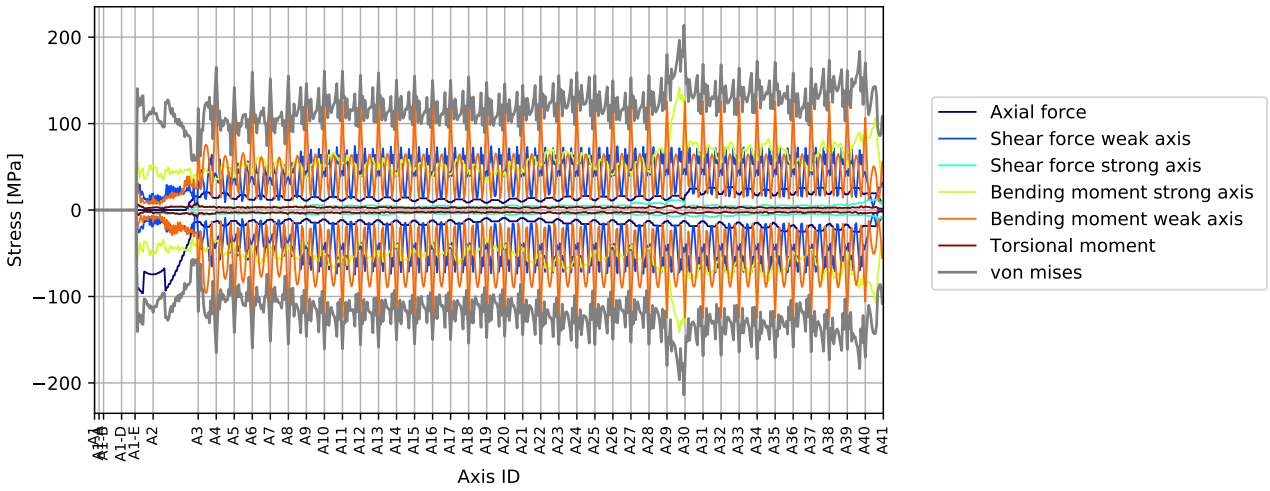

Figure 3.1063: Stress envelope from all force components

3.24.2 Envelope plots

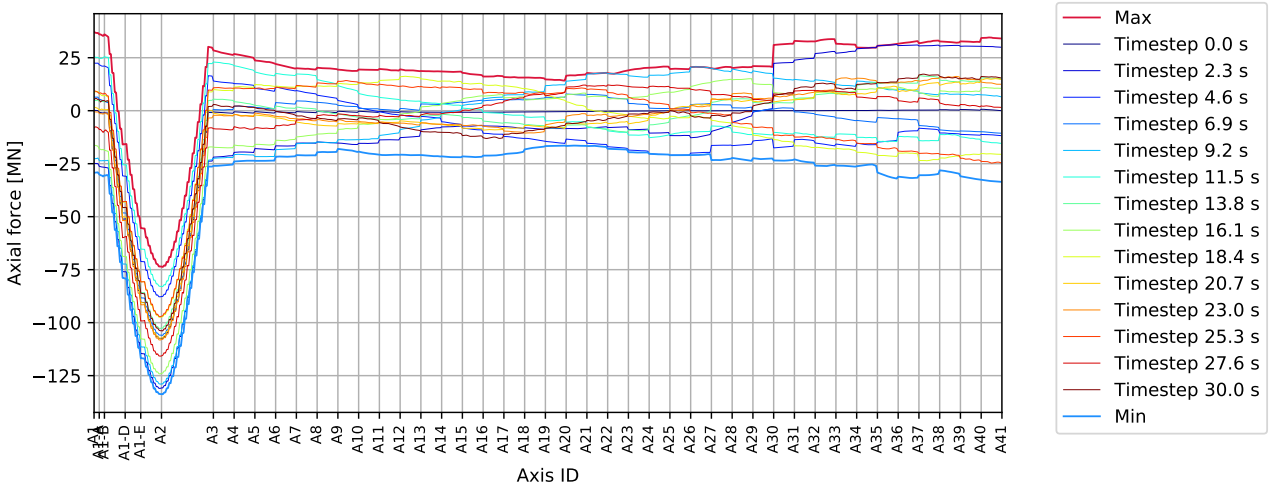

Figure 3.1064: P A30 80deg - bridgegirder : Axial force [MN]

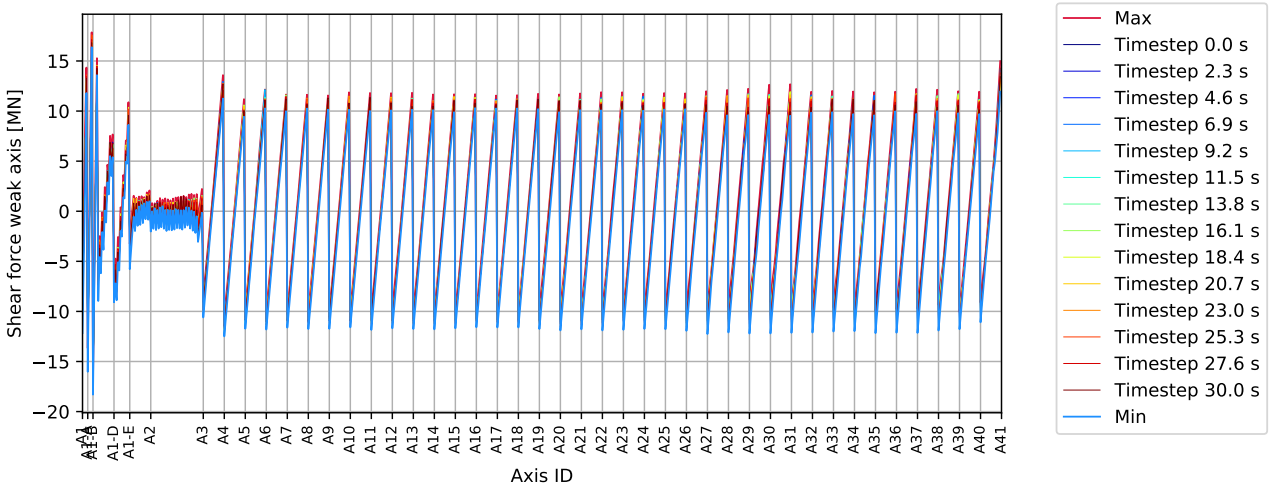

Figure 3.1065: P A30 80deg - bridgegirder : Shear force weak axis [MN]

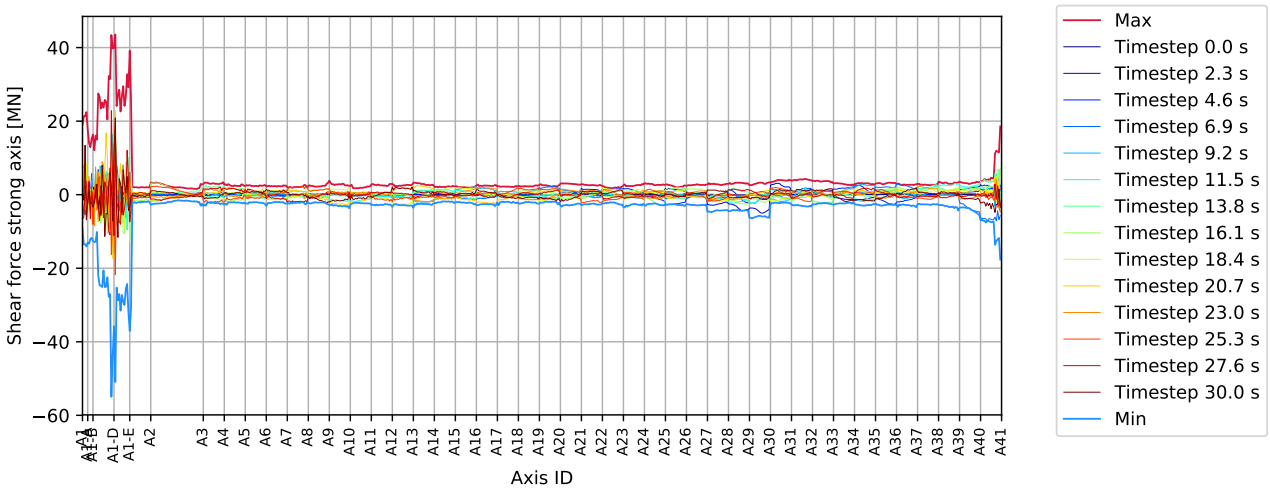

Figure 3.1066: P A30 80deg - bridgegirder : Shear force strong axis [MN]

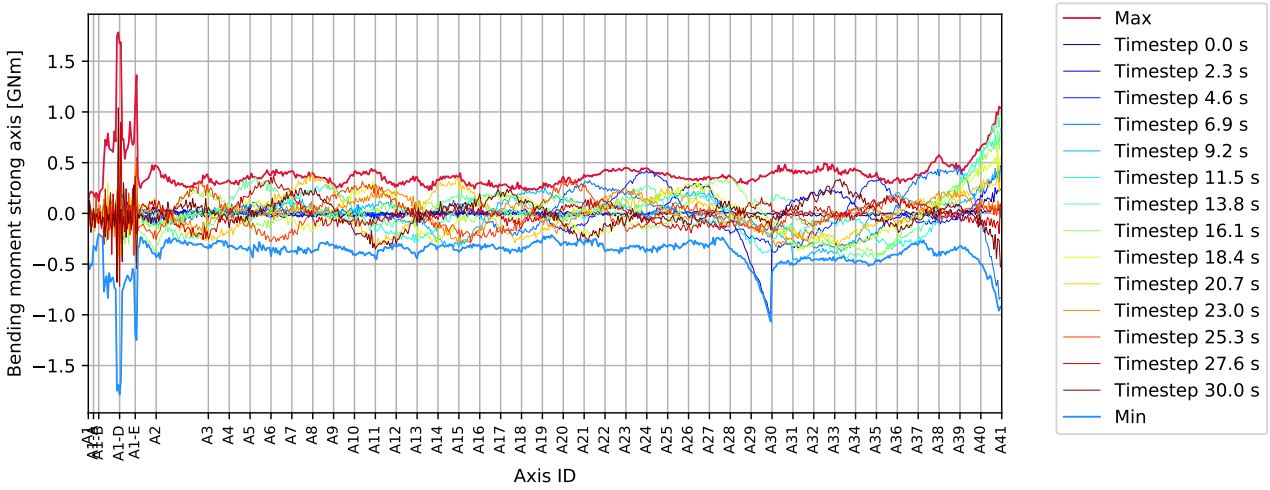

Figure 3.1067: P A30 80deg - bridgegirder : Bending moment strong axis [GNm]

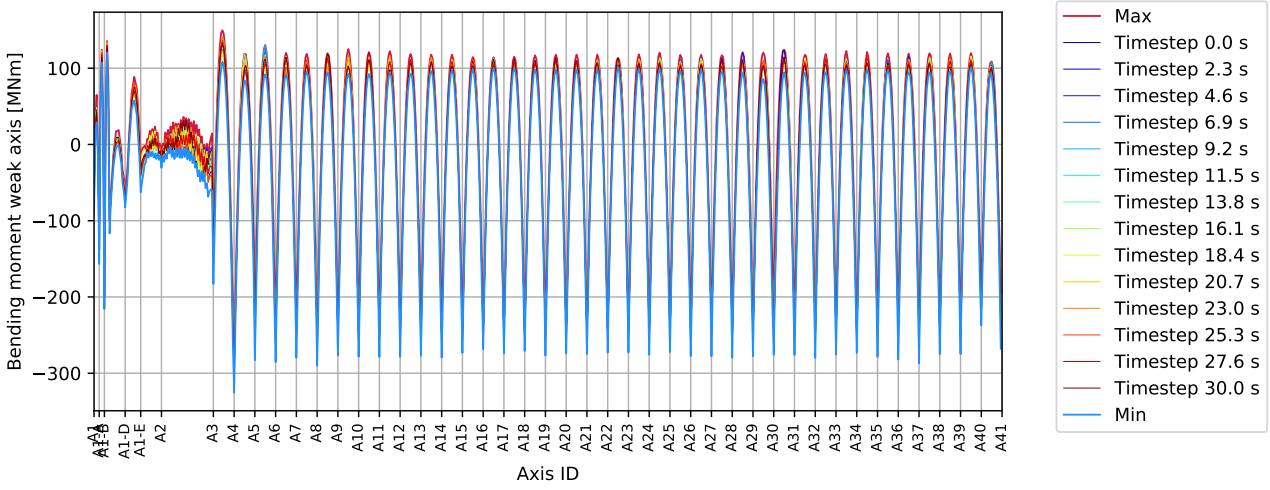

Figure 3.1068: P A30 80deg - bridgegirder : Bending moment weak axis [MNm]

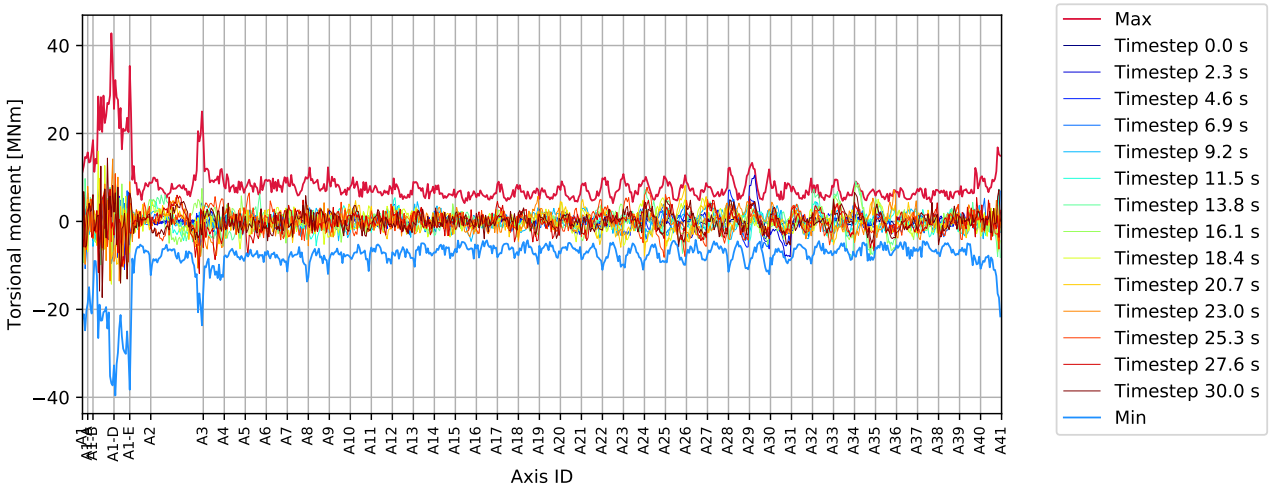

Figure 3.1069: P A30 80deg - bridgegirder : Torsional moment [MNm]

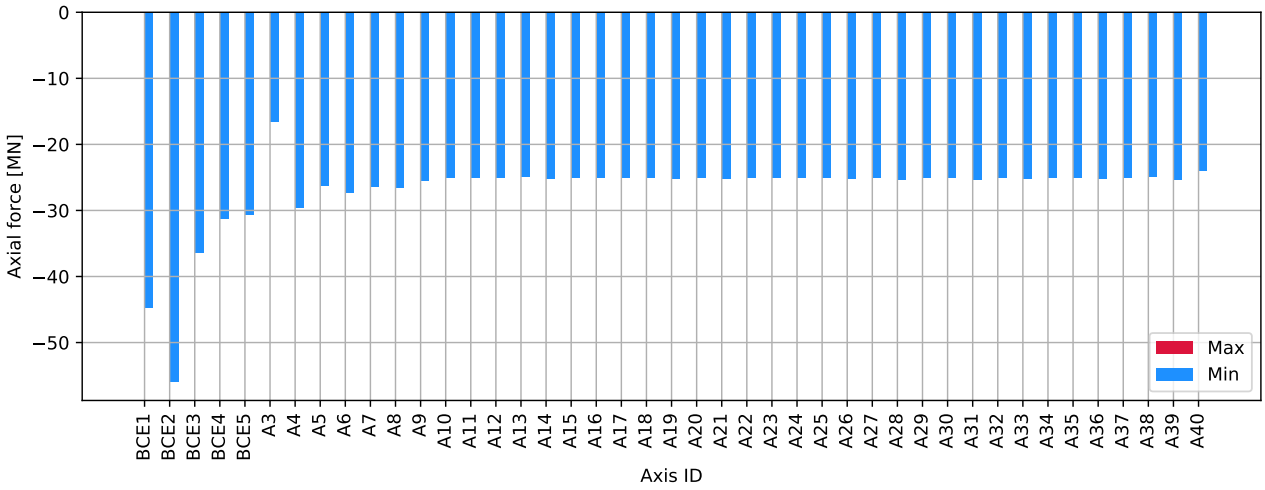

Figure 3.1070: P A30 80deg - columns bottom : Axial force [MN]

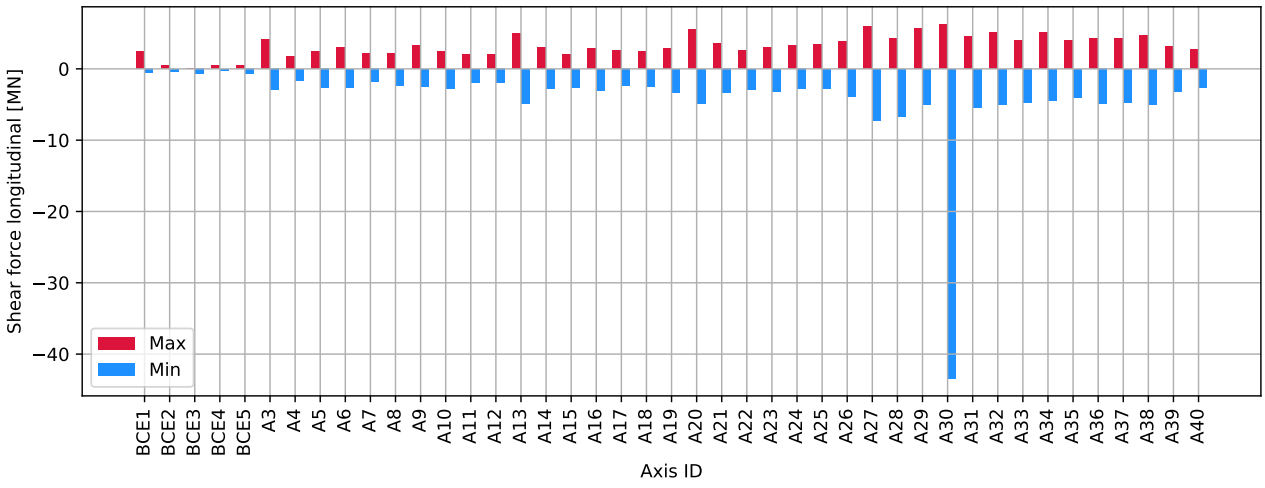

Figure 3.1071: P A30 80deg - columns bottom : Shear force longitudinal [MN]

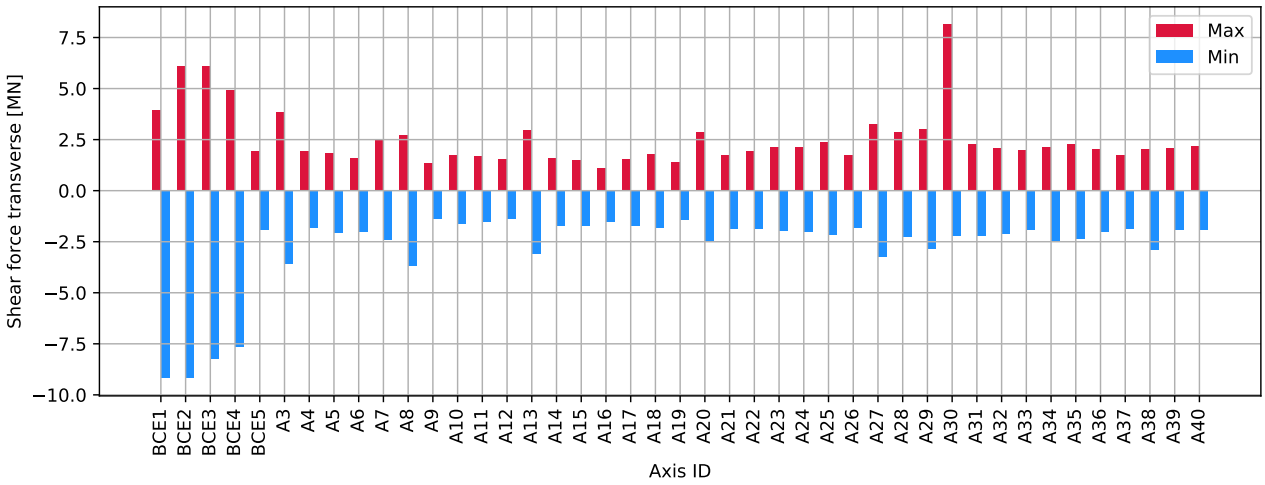

Figure 3.1072: P A30 80deg - columns bottom : Shear force transverse [MN]

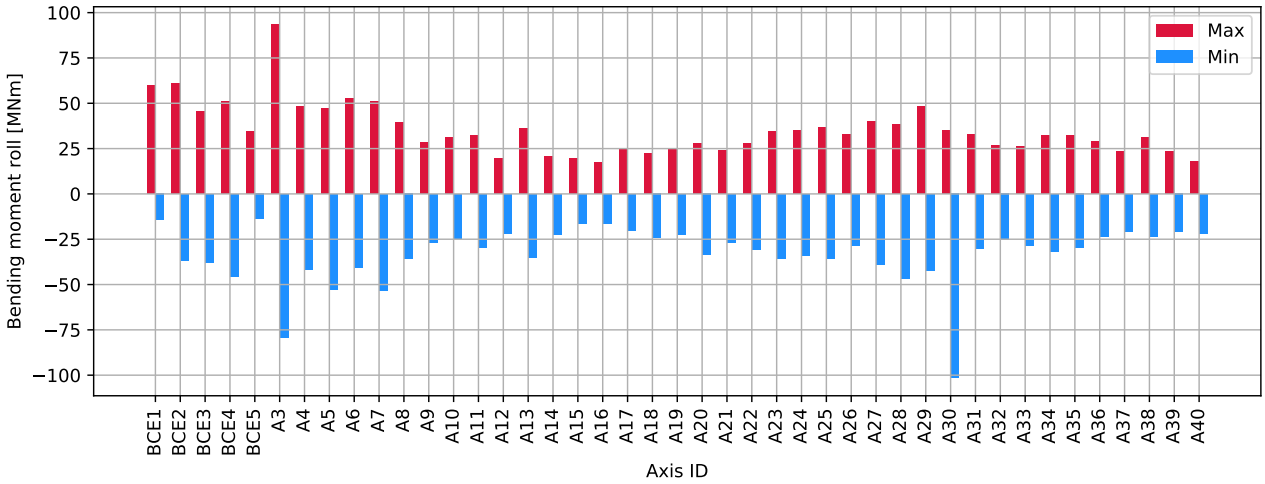

Figure 3.1073: P A30 80deg - columns bottom : Bending moment roll [MNm]

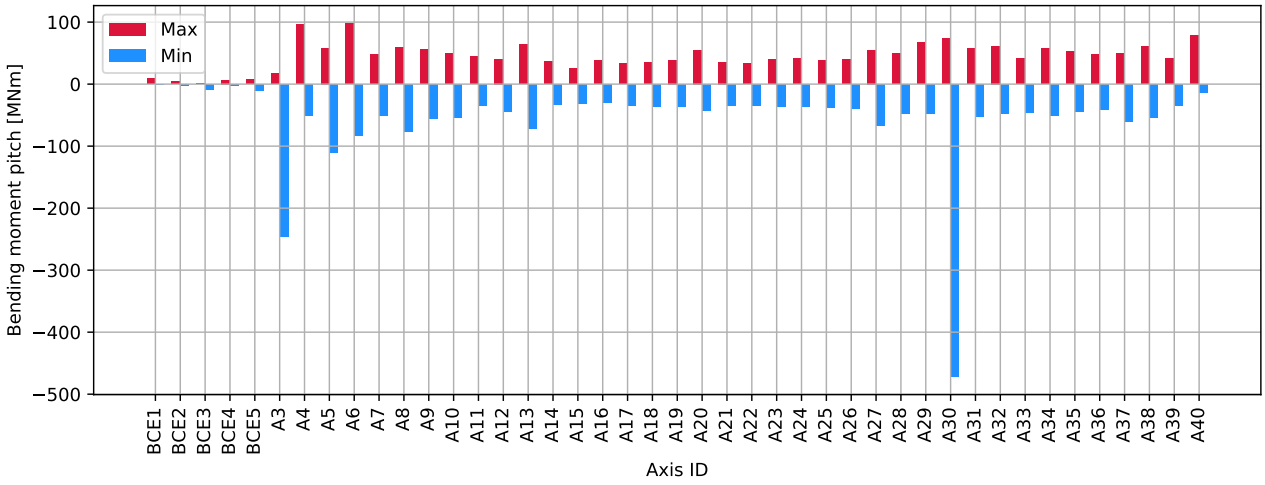

Figure 3.1074: P A30 80deg - columns bottom : Bending moment pitch [MNm]

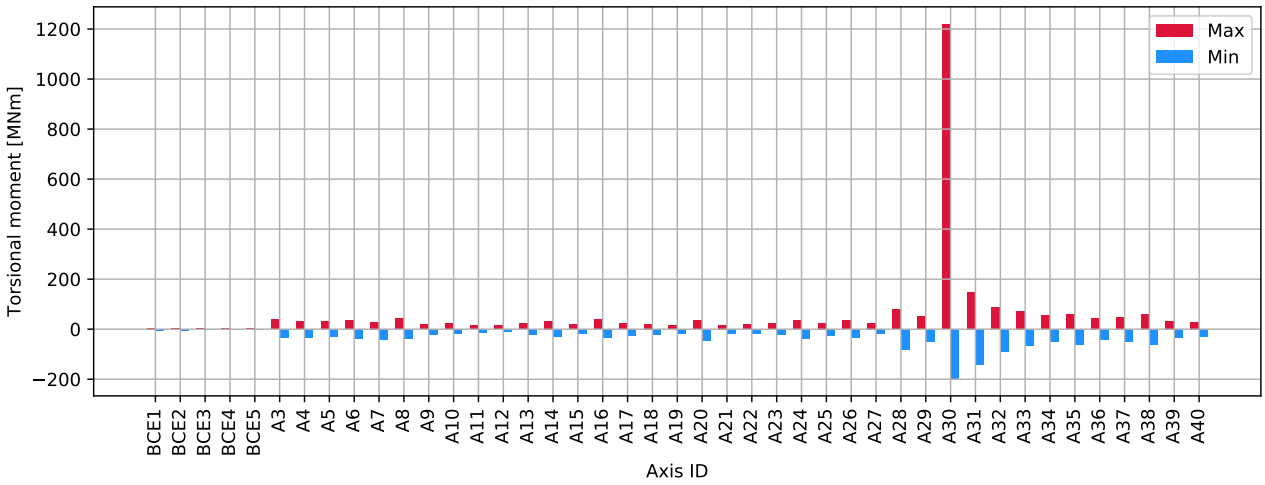

Figure 3.1075: P A30 80deg - columns bottom : Torsional moment [MNm]

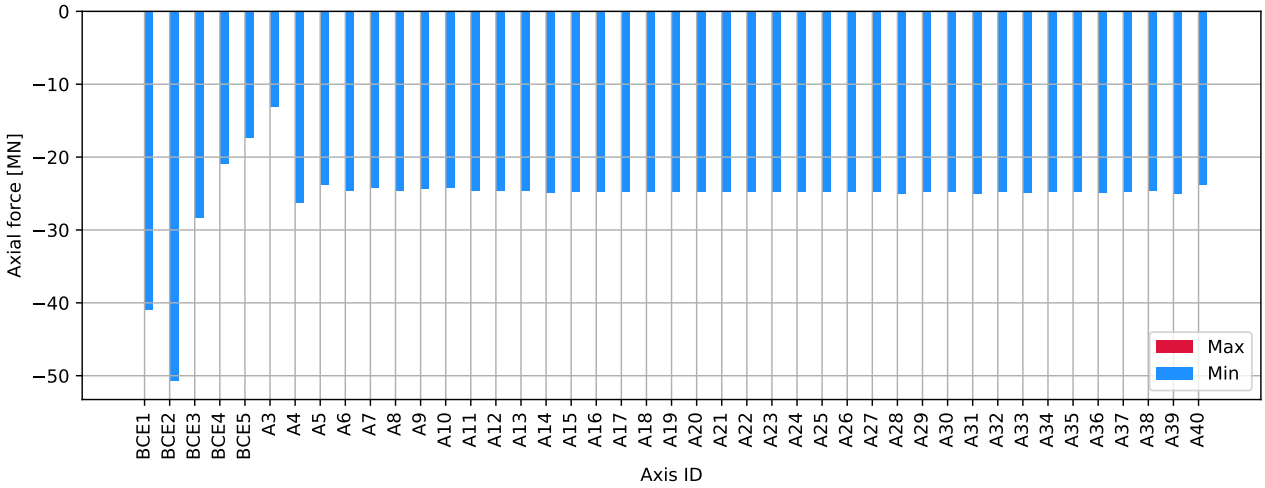

Figure 3.1076: P A30 80deg - columns top : Axial force [MN]

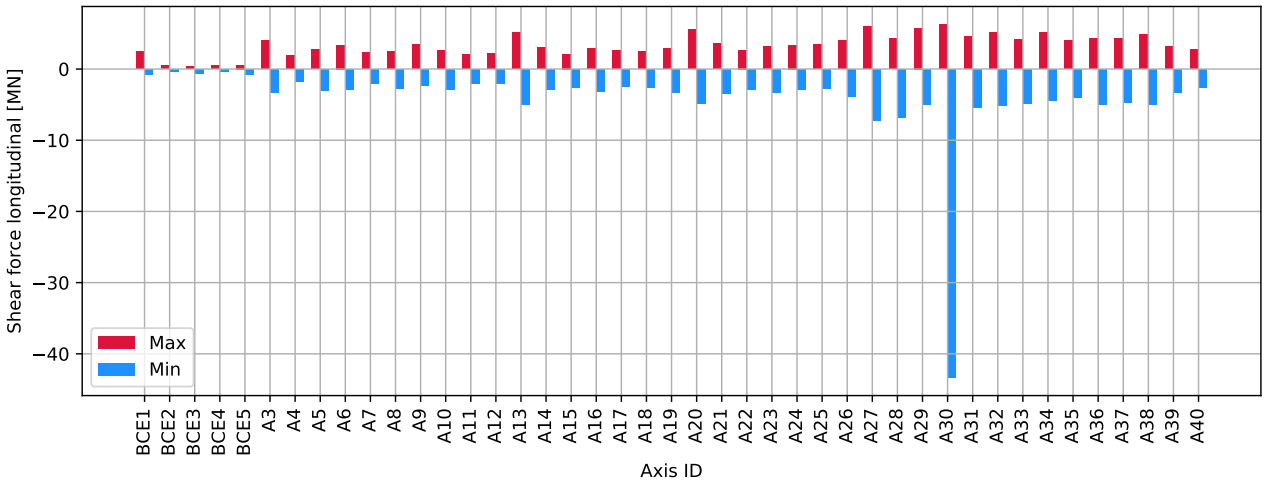

Figure 3.1077: P A30 80deg - columns top : Shear force longitudinal [MN]

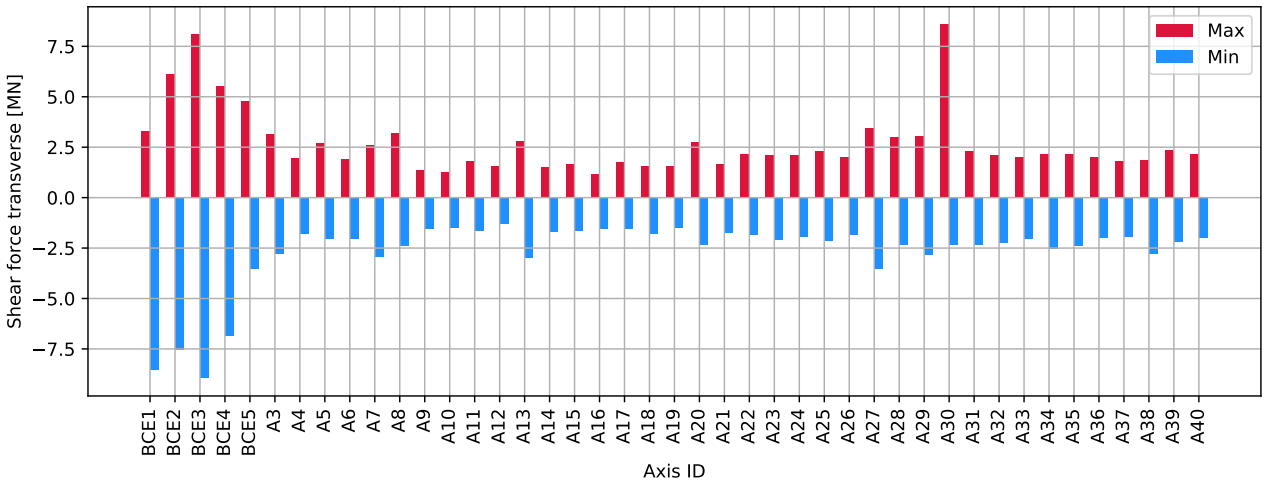

Figure 3.1078: P A30 80deg - columns top : Shear force transverse [MN]

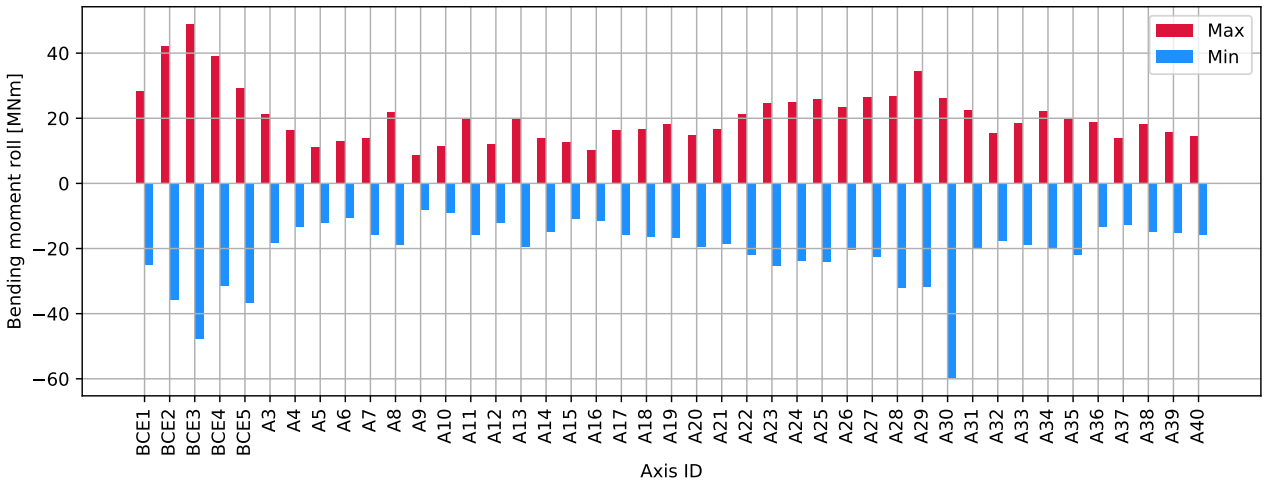

Figure 3.1079: P A30 80deg - columns top : Bending moment roll [MNm]

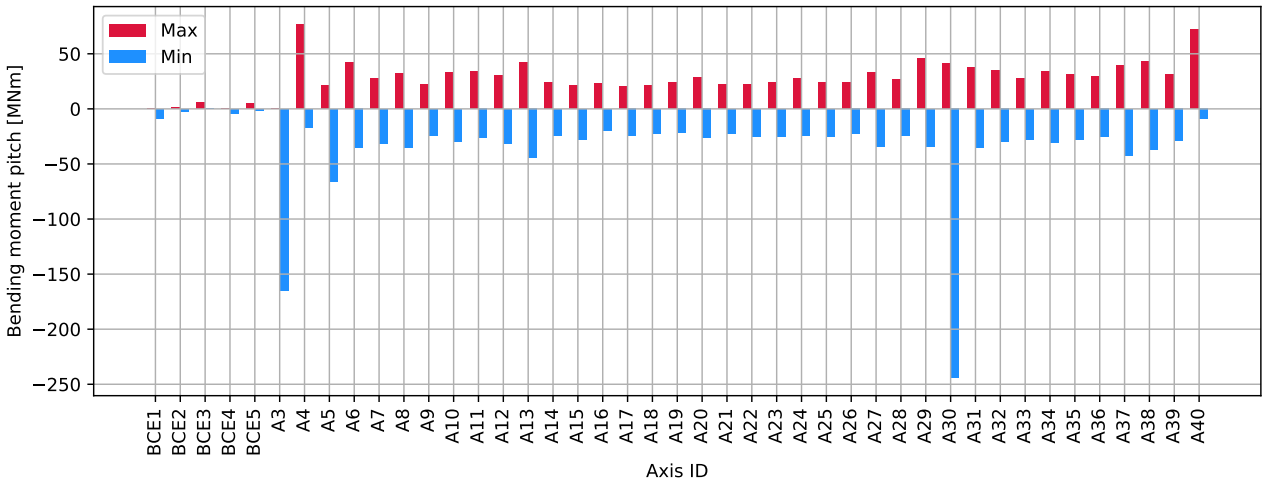

Figure 3.1080: P A30 80deg - columns top : Bending moment pitch [MNm]

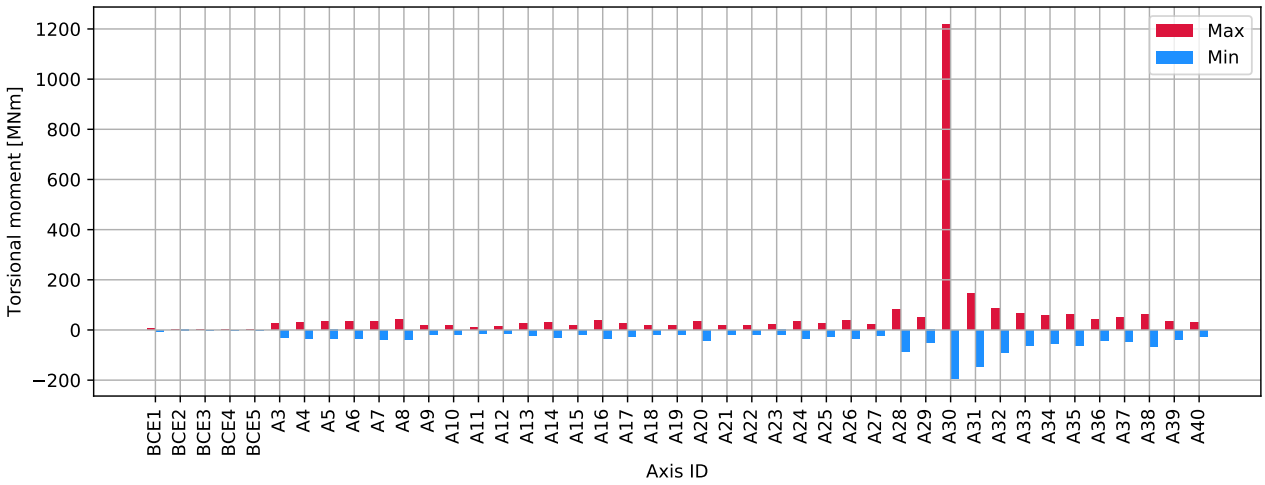

Figure 3.1081: P A30 80deg - columns top : Torsional moment [MNm]

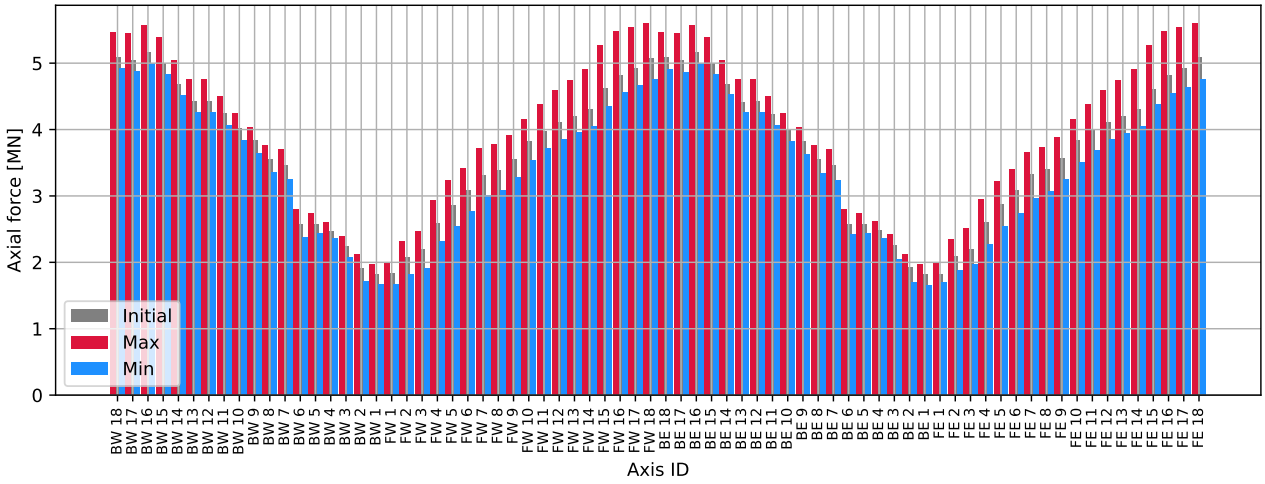

Figure 3.1082: P A30 80deg - cables : Axial force [MN]

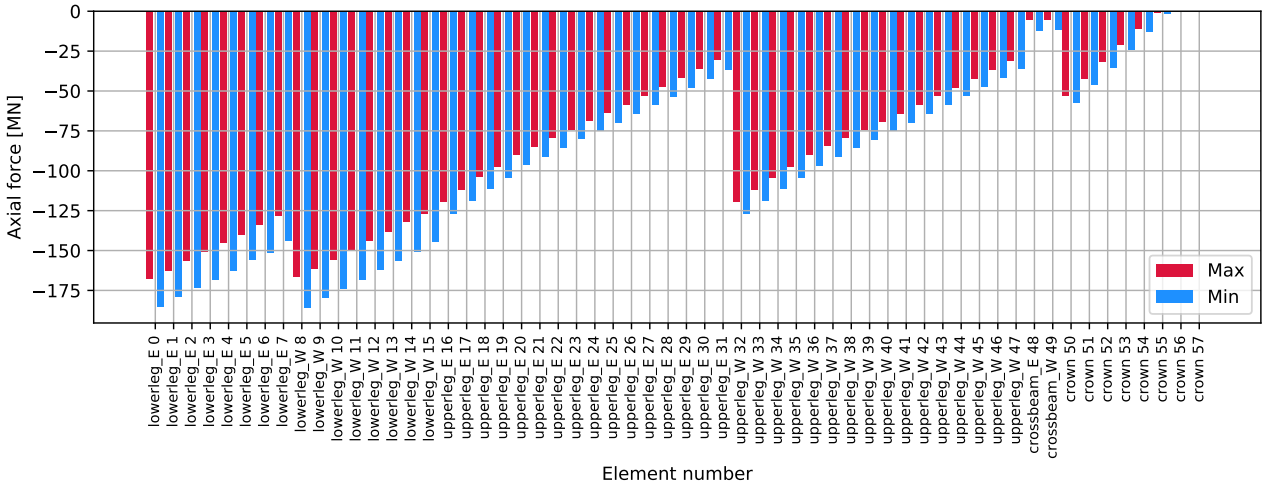

Figure 3.1083: P A30 80deg - tower: Axial force [MN]

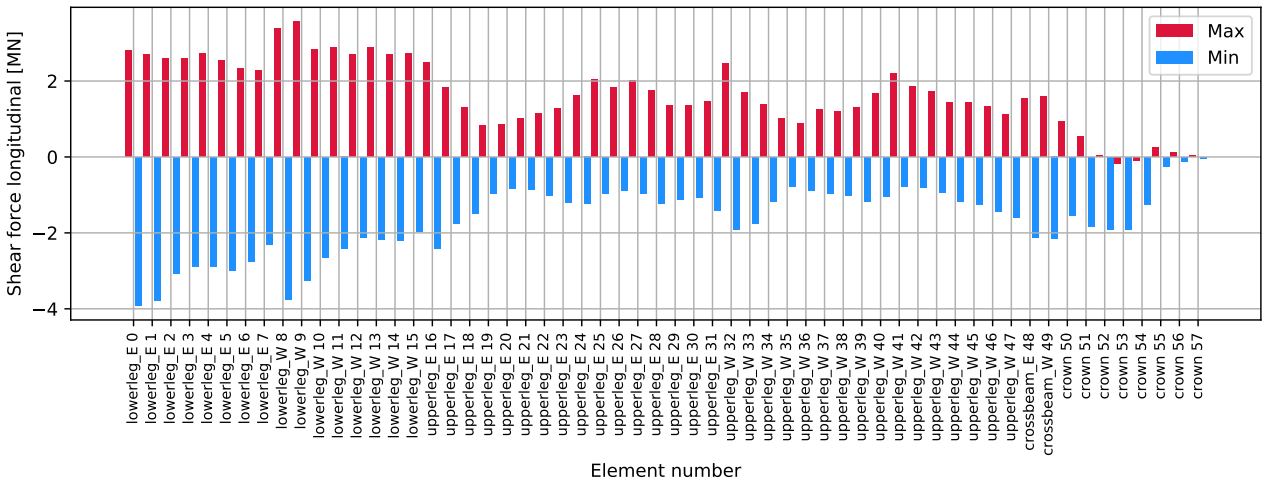

Figure 3.1084: P A30 80deg - tower: Shear force longitudinal [MN]

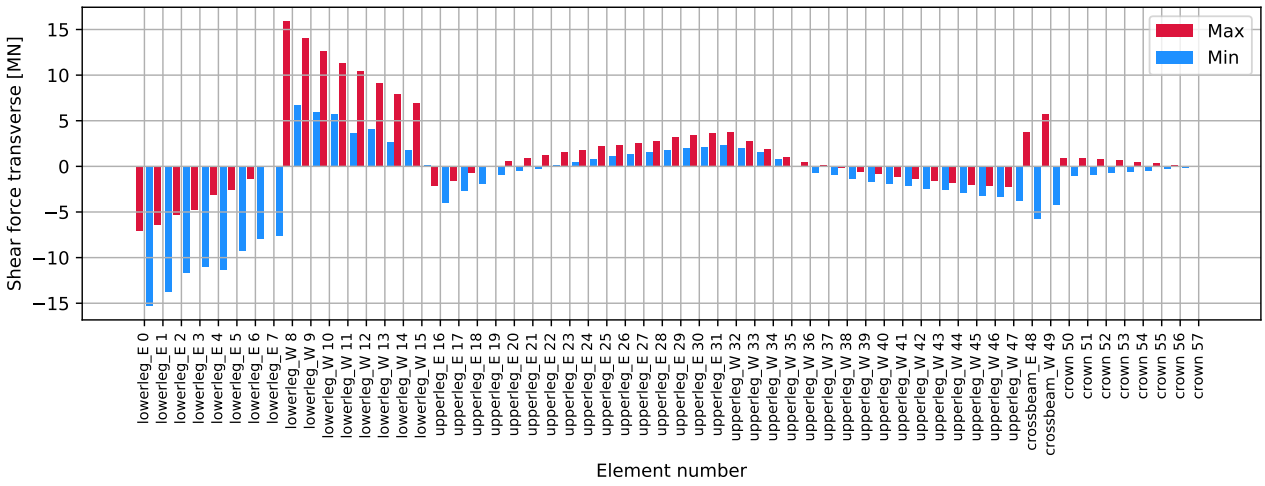

Figure 3.1085: P A30 80deg - tower: Shear force transverse [MN]

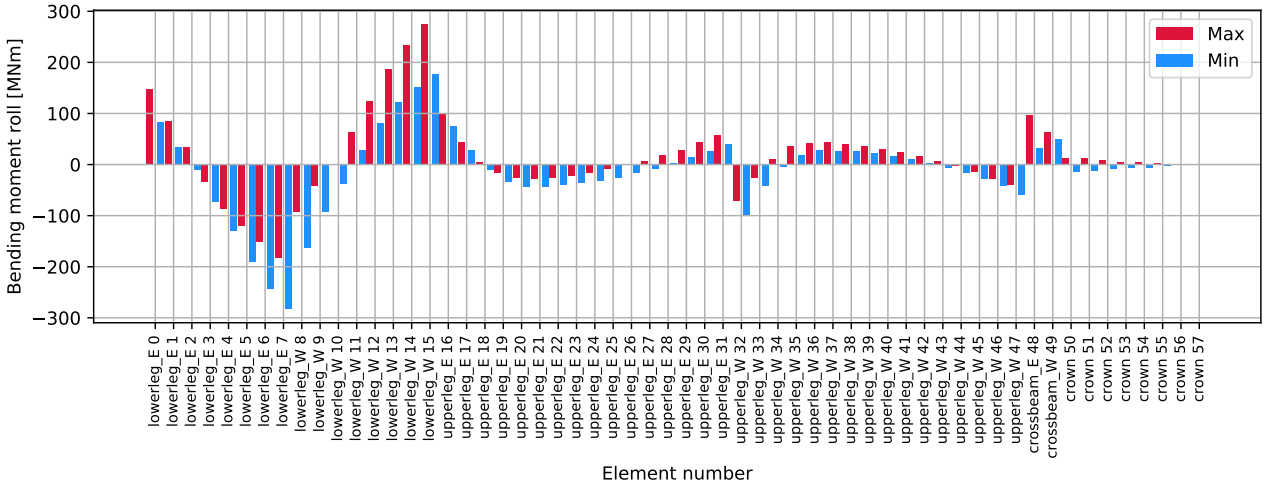

Figure 3.1086: P A30 80deg - tower: Bending moment roll [MNm]

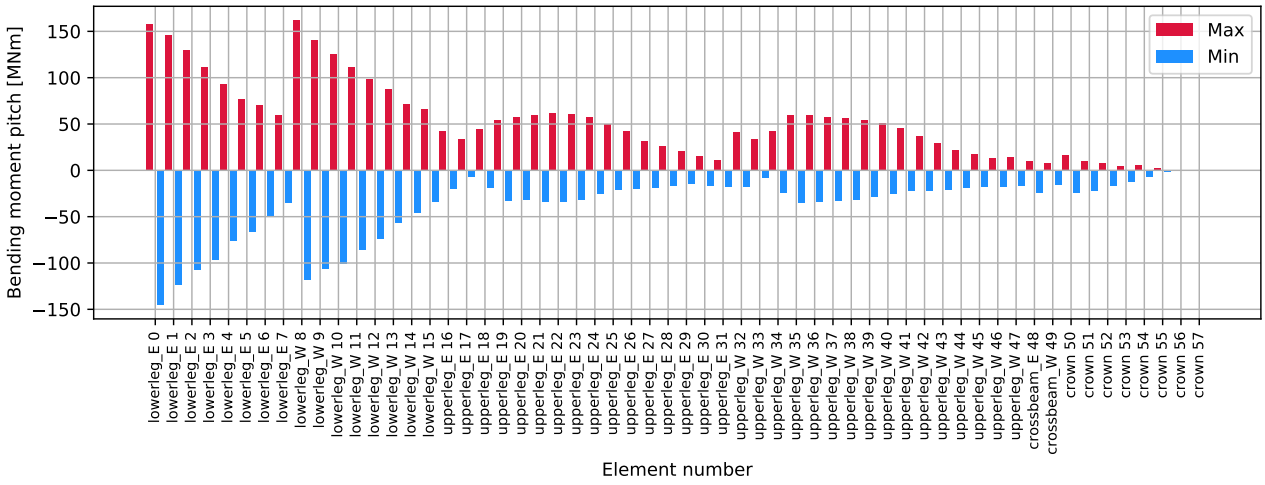

Figure 3.1087: P A30 80deg - tower: Bending moment pitch [MNm]

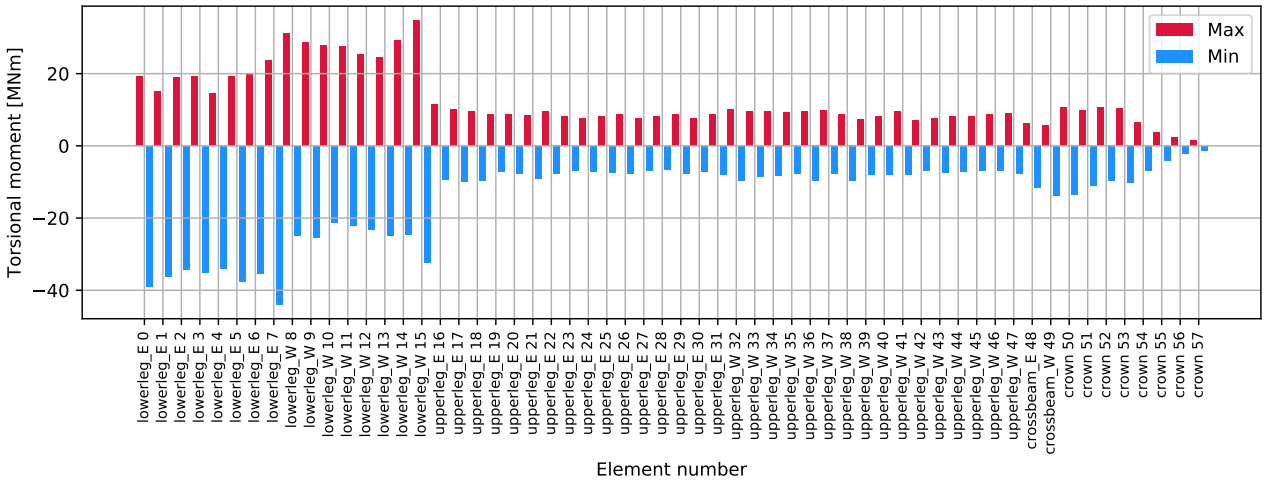

Figure 3.1088: P A30 80deg - tower: Torsional moment [MNm]

3.24.3 Time series

Note : Time series are filtered using a Saviotzky-Golay filter for increased readability of the time history plots. Hence, maximum values that occur due to a rapid vibration are not shown in the plots. For maximum values, refer to the tabulated data.
All elements are numbered from South to North, bottom to top

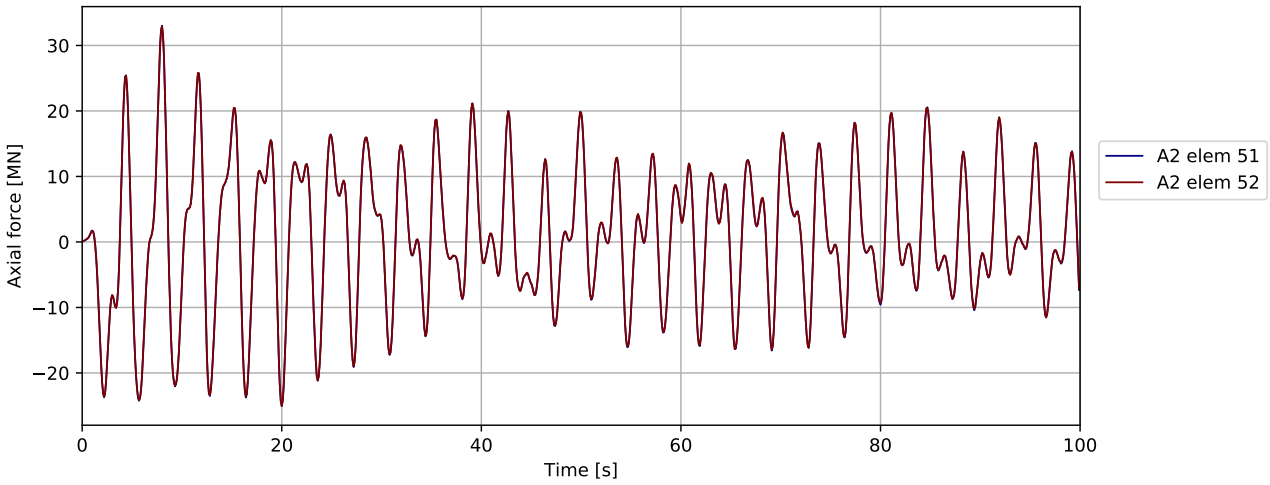

Figure 3.1089: P A30 80deg - bridgegirder @ pylon: Axial force [MN]

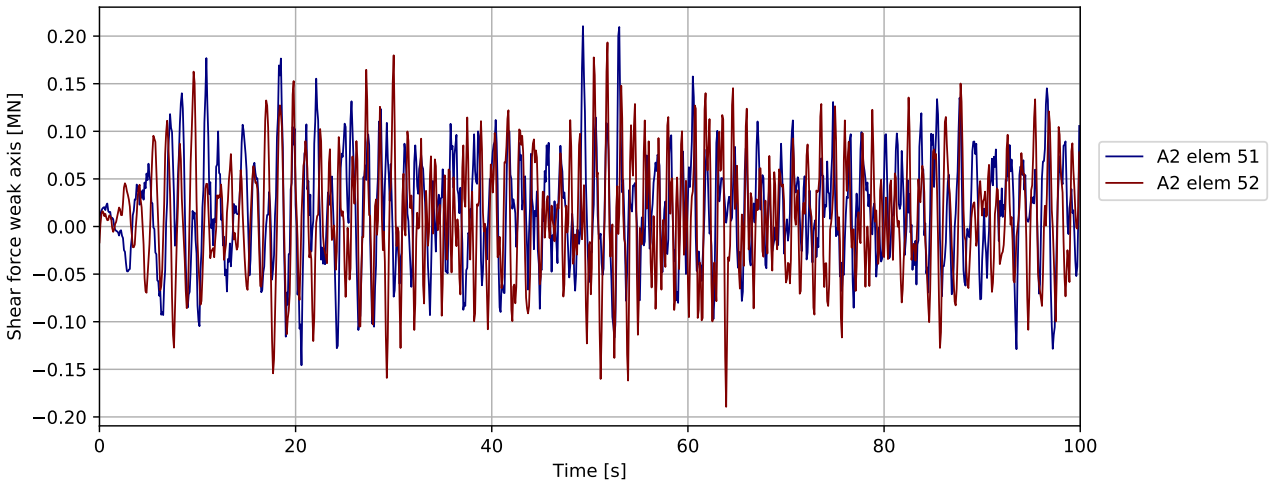

Figure 3.1090: P A30 80deg - bridgegirder @ pylon: Shear force weak axis [MN]

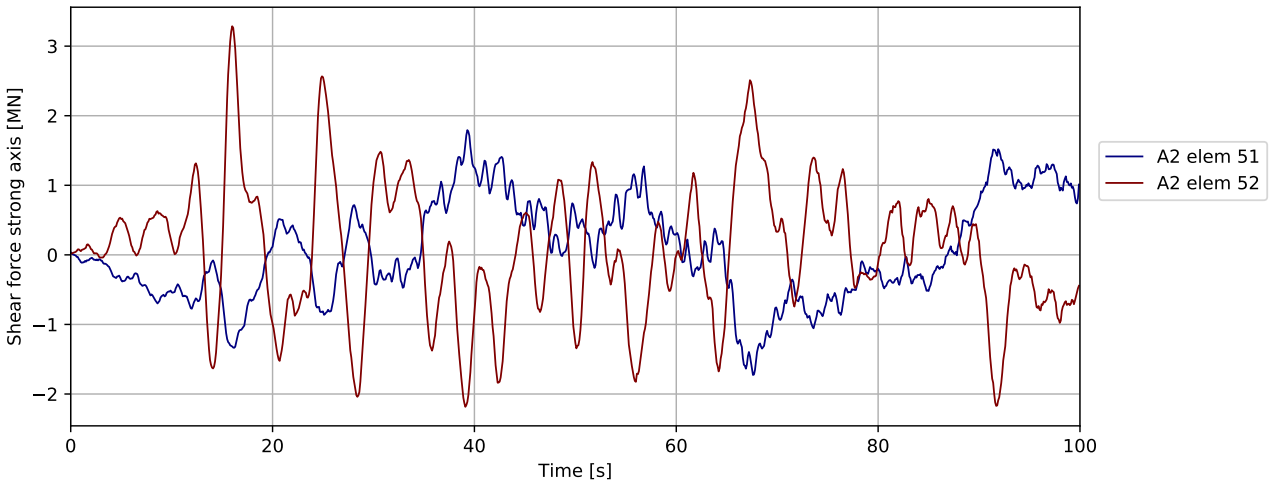

Figure 3.1091: P A30 80deg - bridgegirder @ pylon: Shear force strong axis [MN]

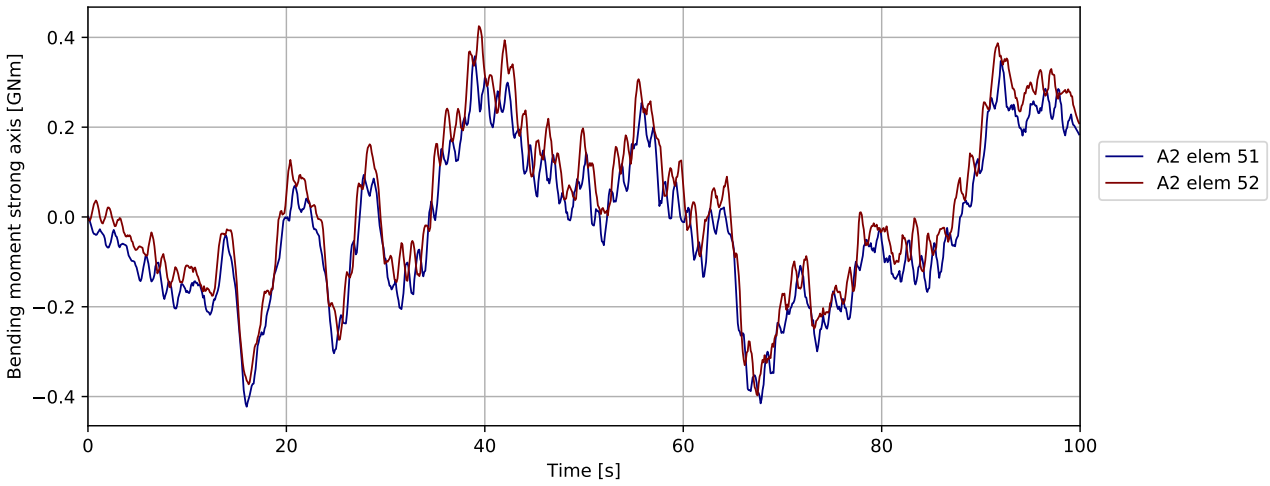

Figure 3.1092: P A30 80deg - bridgegirder @ pylon: Bending moment strong axis [GNm]

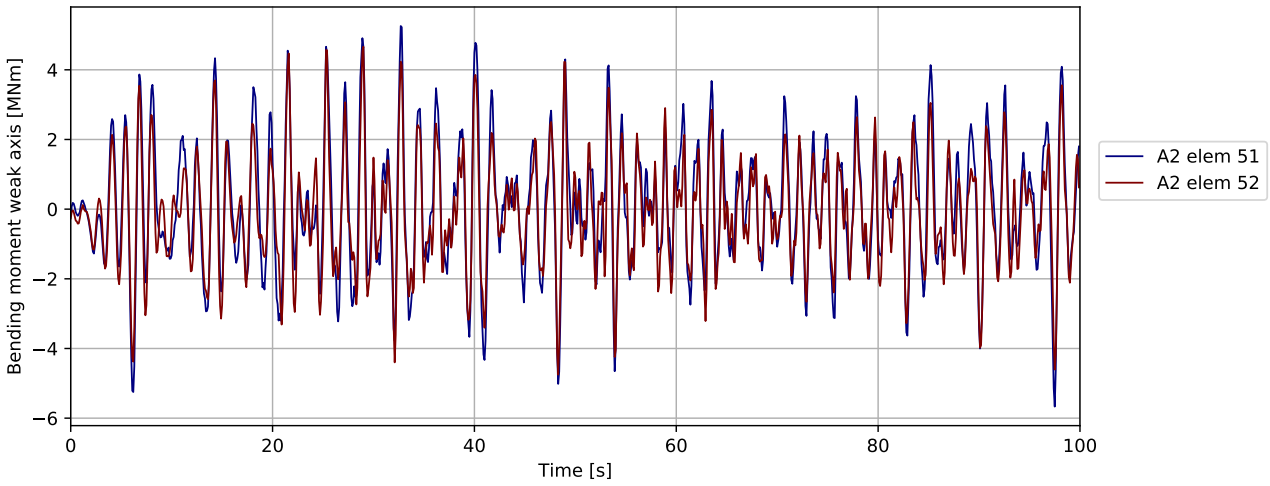

Figure 3.1093: P A30 80deg - bridgegirder @ pylon: Bending moment weak axis [MNm]

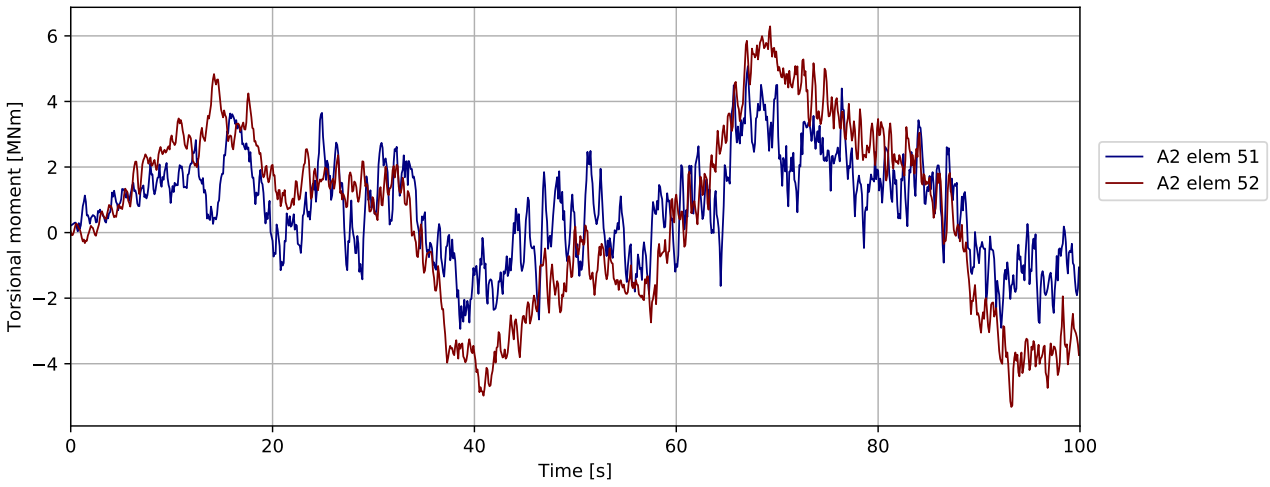

Figure 3.1094: P A30 80deg - bridgegirder @ pylon: Torsional moment [MNm]

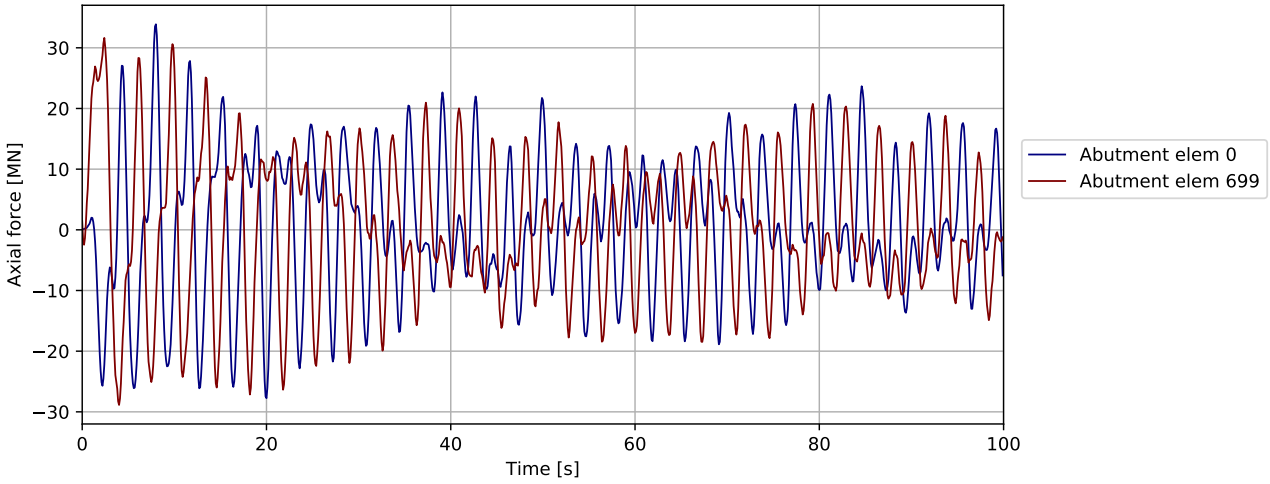

Figure 3.1095: P A30 80deg - bridgegirder @abutments: Axial force [MN]

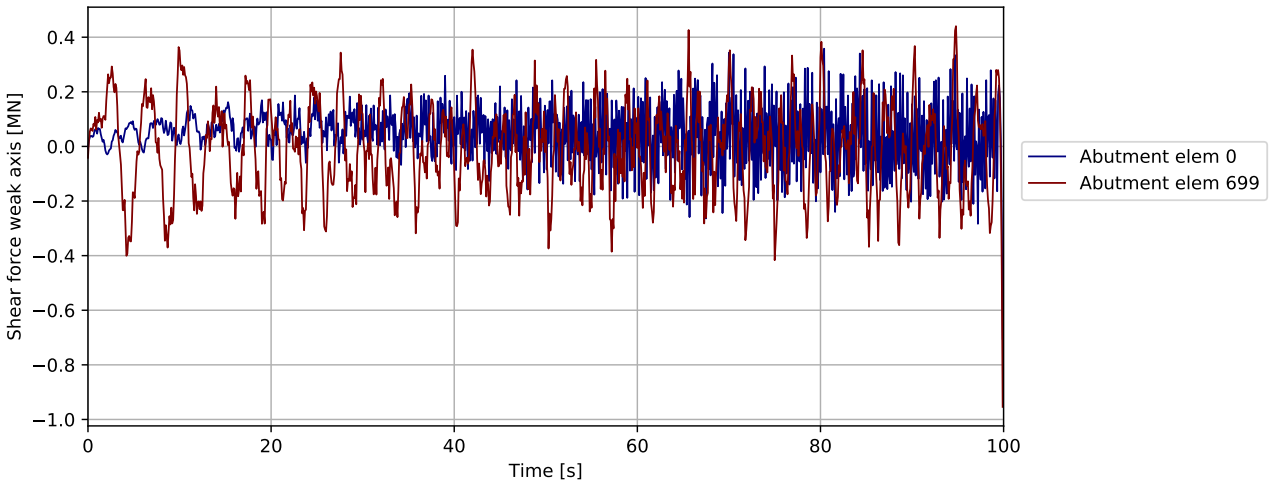

Figure 3.1096: P A30 80deg - bridgegirder @abutments: Shear force weak axis [MN]

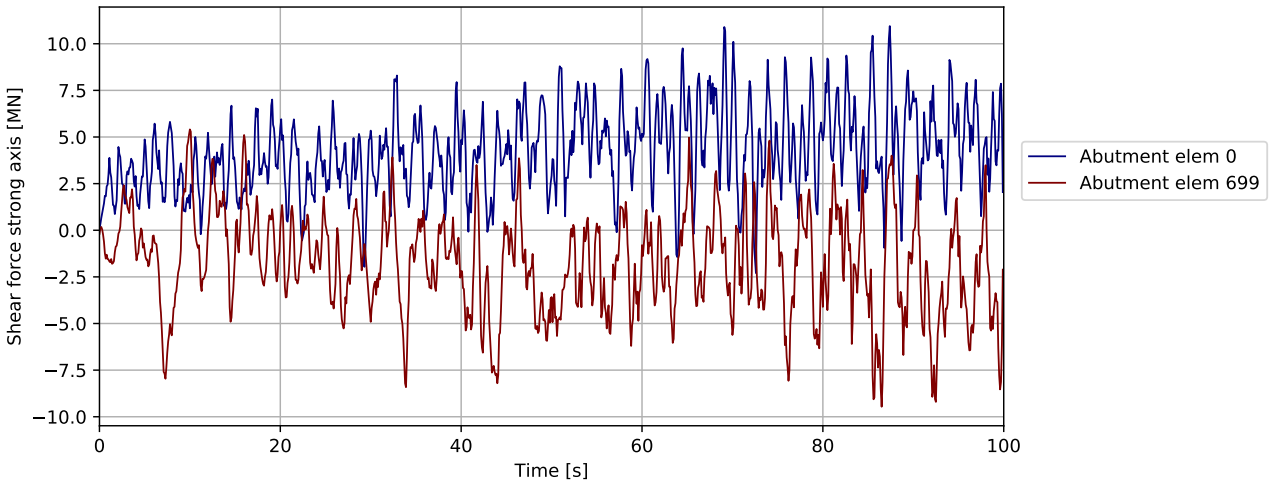

Figure 3.1097: P A30 80deg - bridgegirder @abutments: Shear force strong axis [MN]

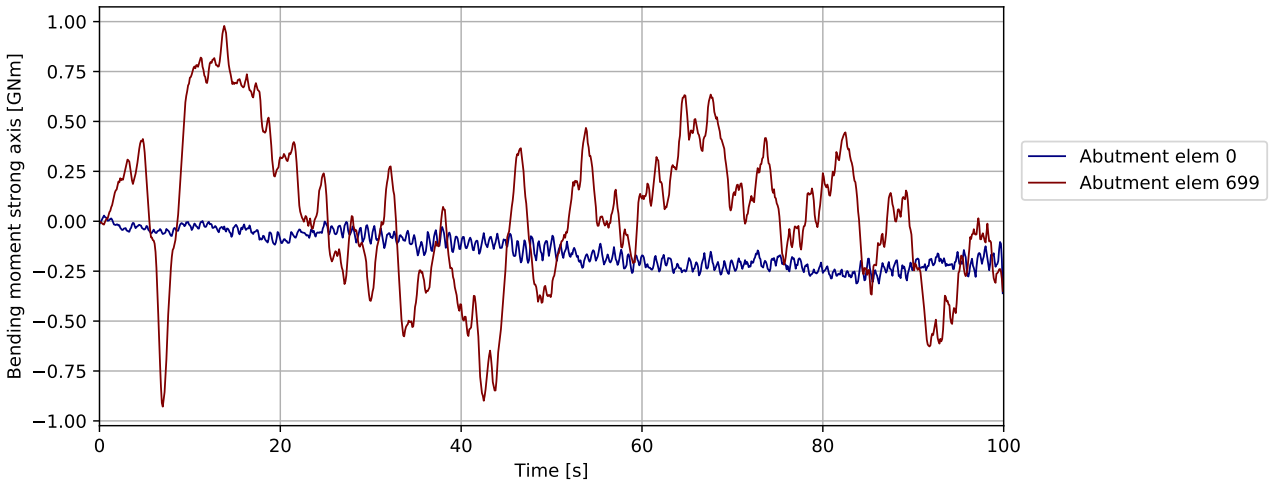

Figure 3.1098: P A30 80deg - bridgegirder @abutments: Bending moment strong axis [GNm]

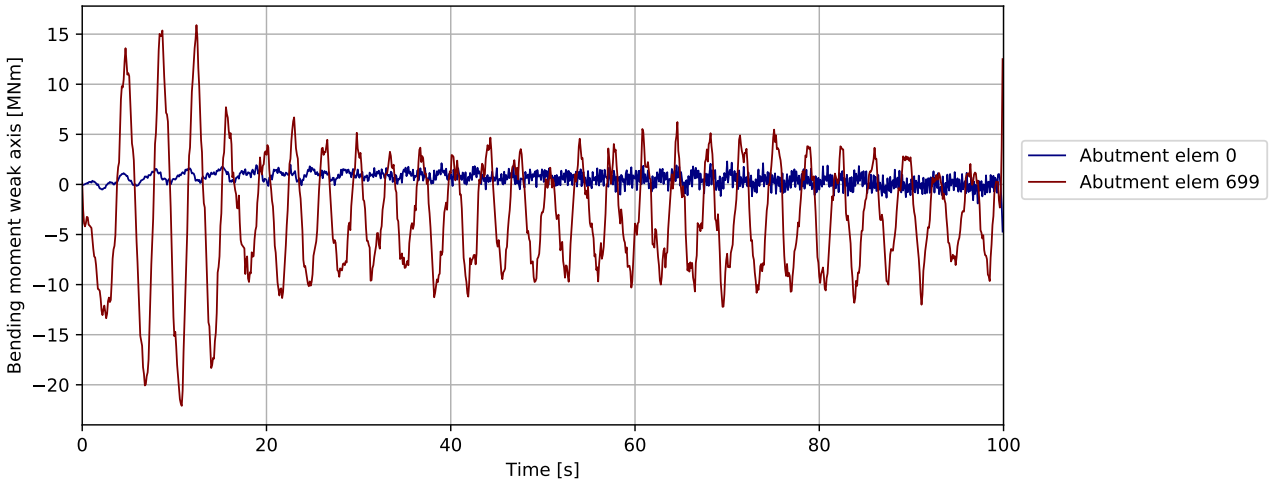

Figure 3.1099: P A30 80deg - bridgegirder @abutments: Bending moment weak axis [MNm]

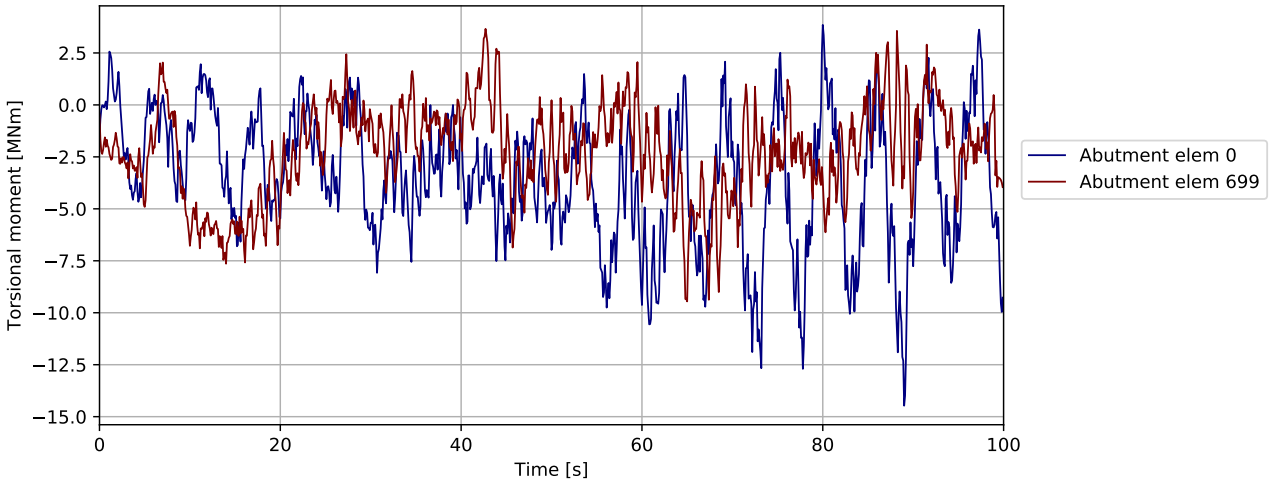

Figure 3.1100: P A30 80deg - bridgegirder @abutments: Torsional moment [MNm]

Note : Compressive spring force is negative

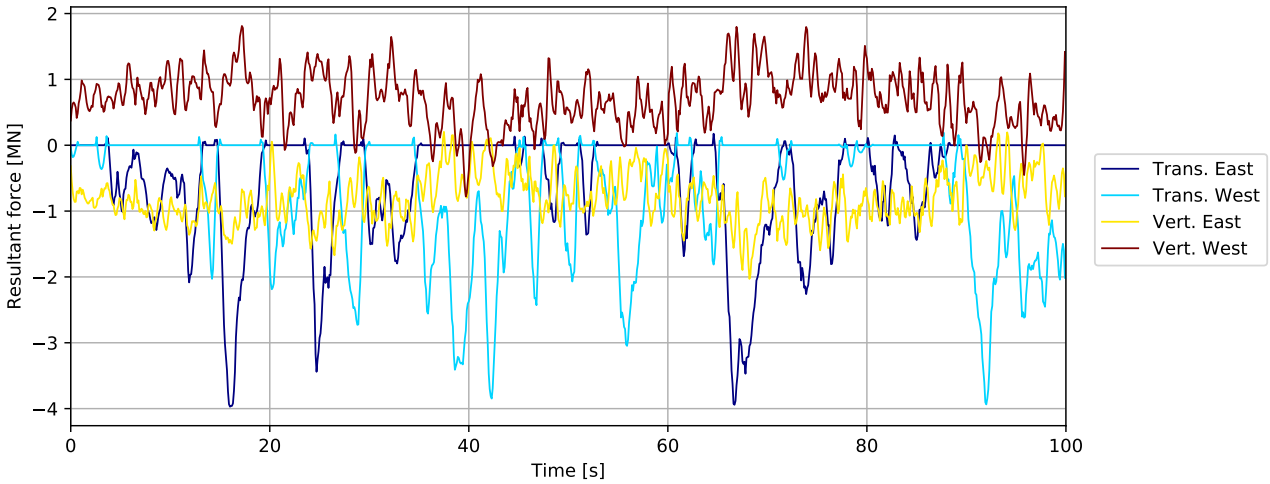

Figure 3.1101: P A30 80deg - bridgegirder supports in tower: Resultant force [MN]

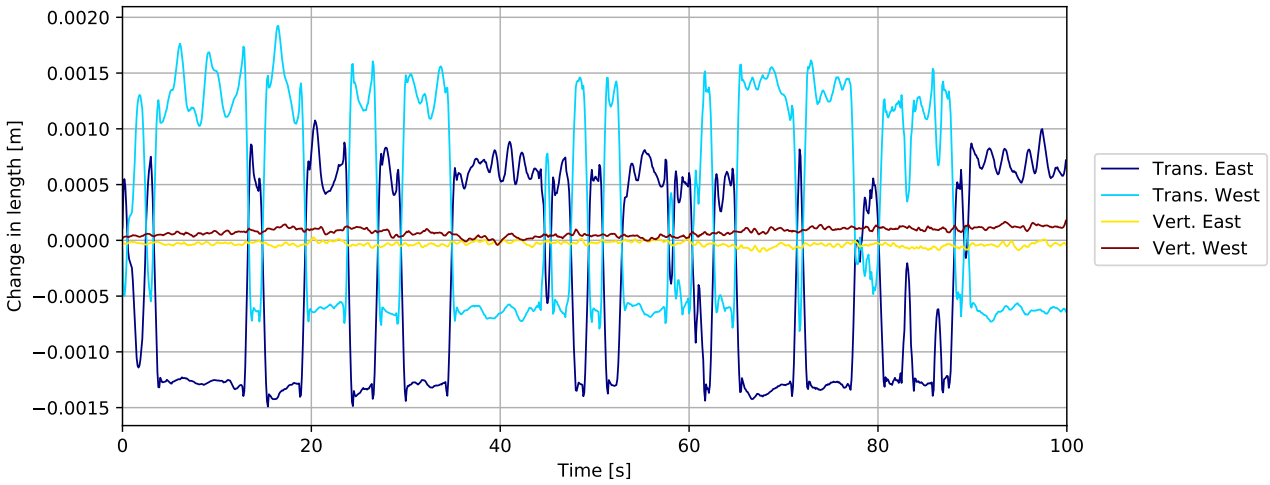

Figure 3.1102: P A30 80deg - bridgegirder supports in tower: Change in length [m]

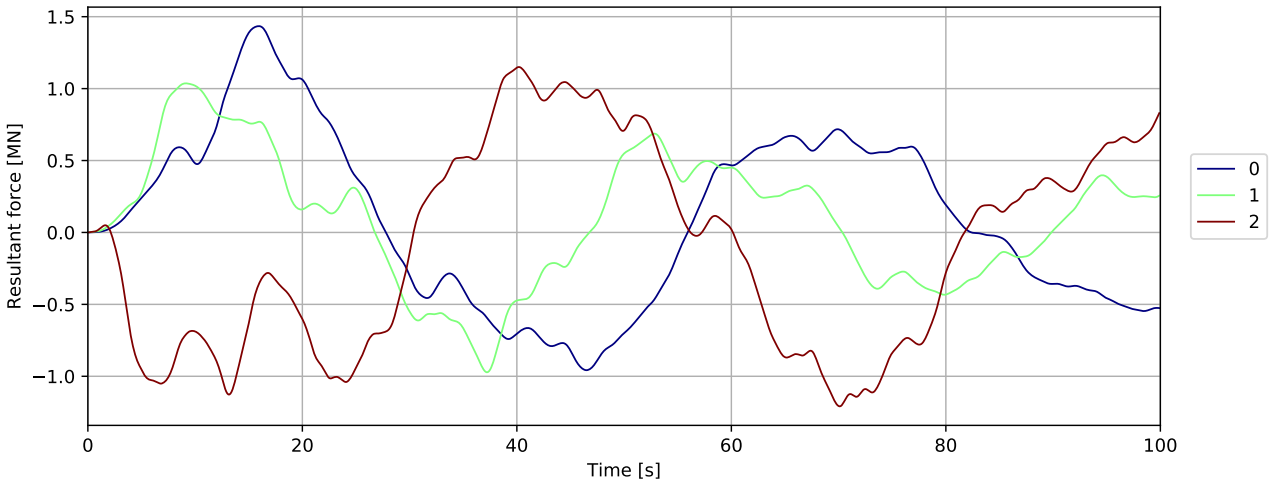

Figure 3.1103: Mooring force

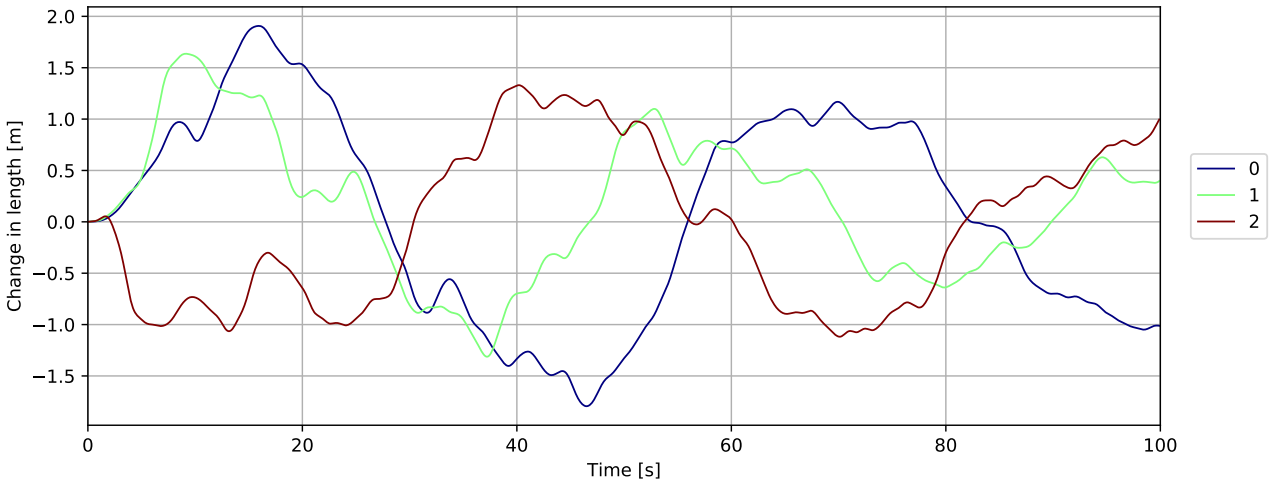

Figure 3.1104: Mooring displacement

3.25 PontoonA38 80deg

3.25.1 Overall response

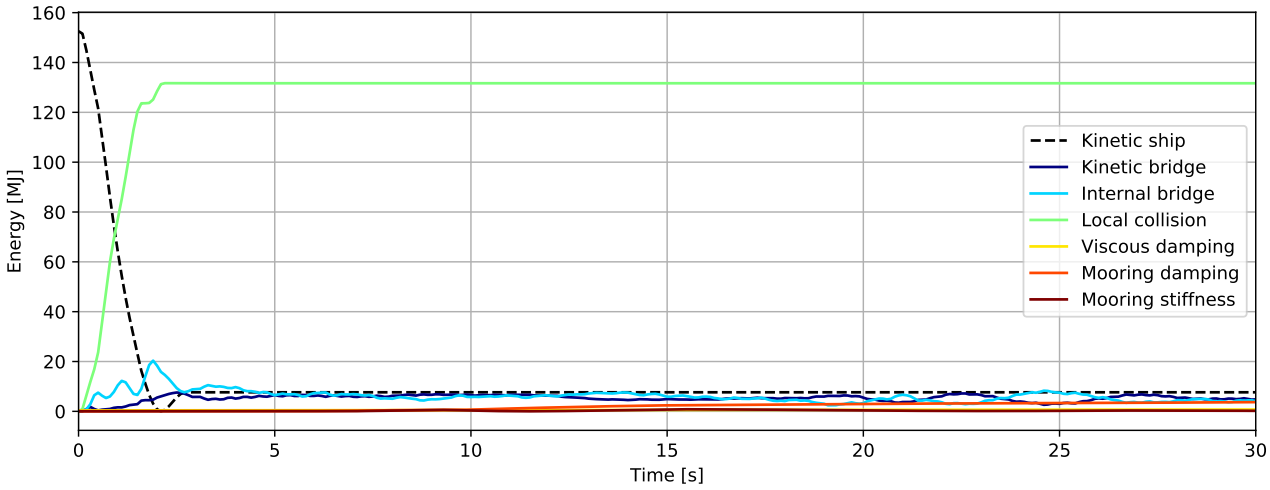

Figure 3.1105: Energy [MJ] - initial phase

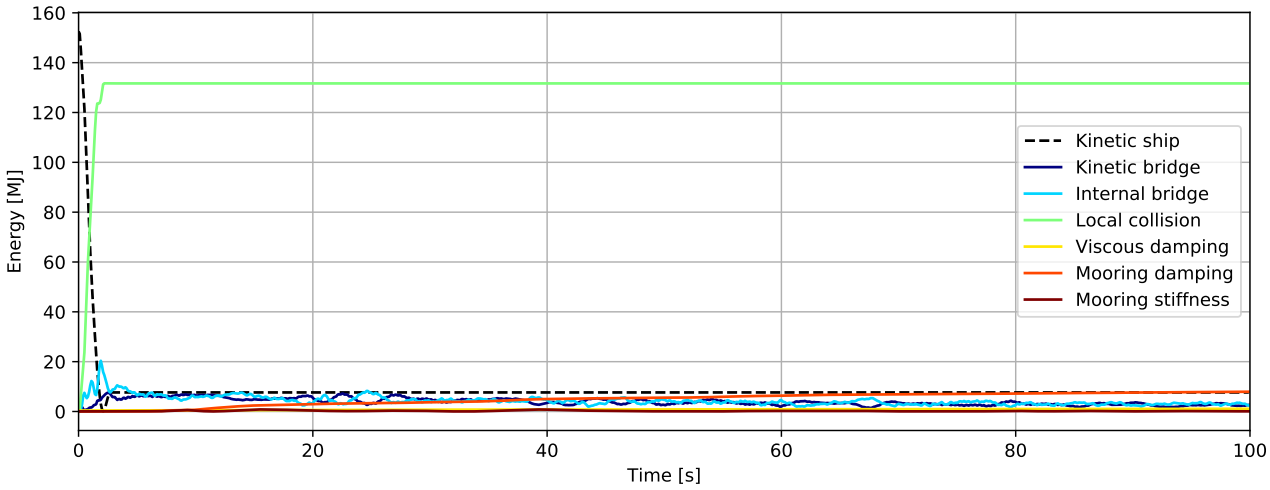

Figure 3.1106: Energy [MJ]

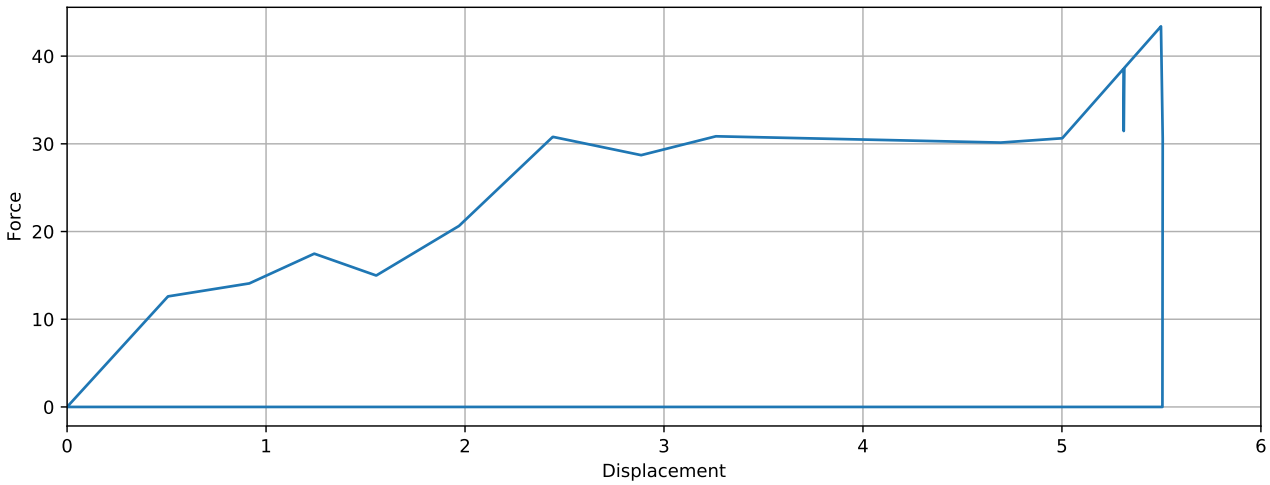

Figure 3.1107: Simulated local collision force-displacement

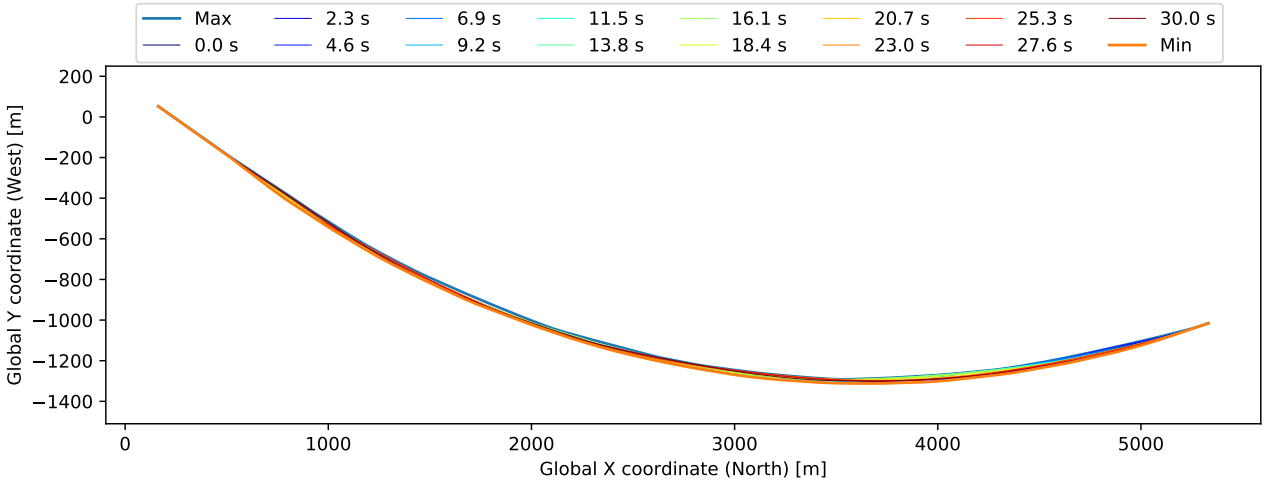

Figure 3.1108: Bridgegirder deflection (10x displacment scaling)

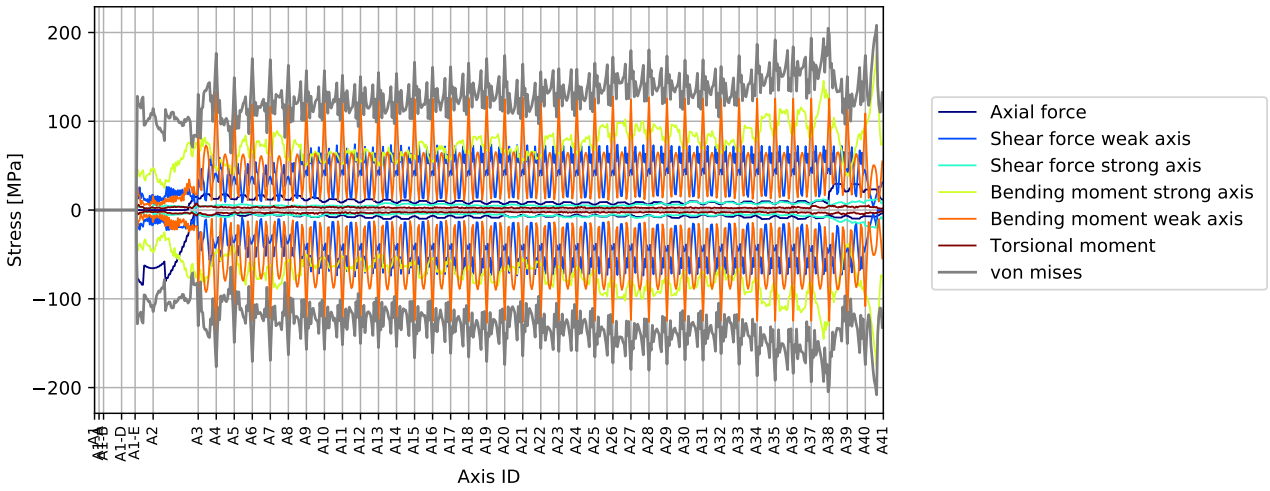

Figure 3.1109: Stress envelope from all force components

3.25.2 Envelope plots

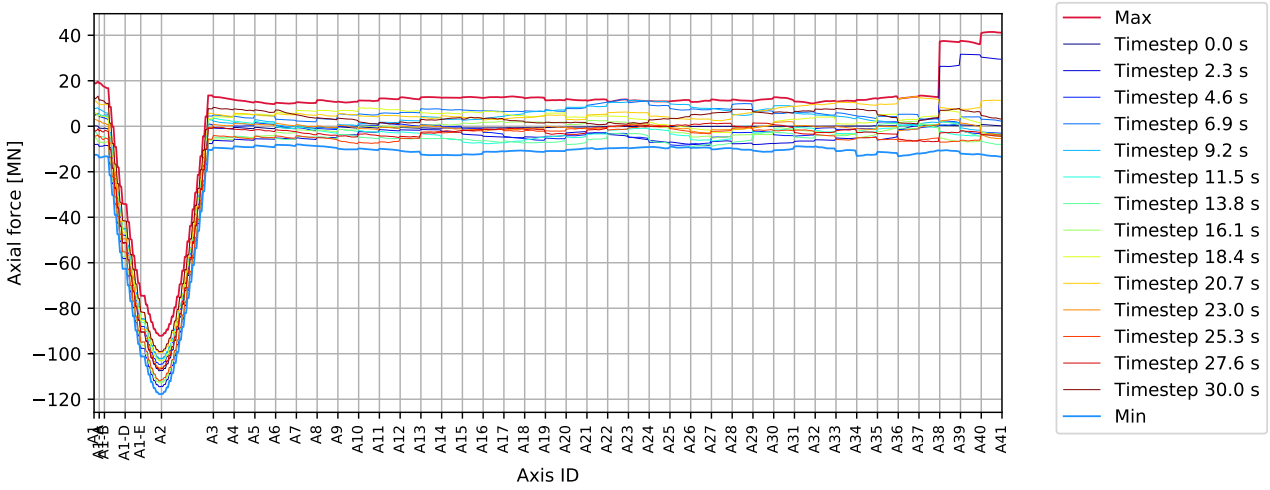

Figure 3.1110: P A38 80deg - bridgegirder : Axial force [MN]

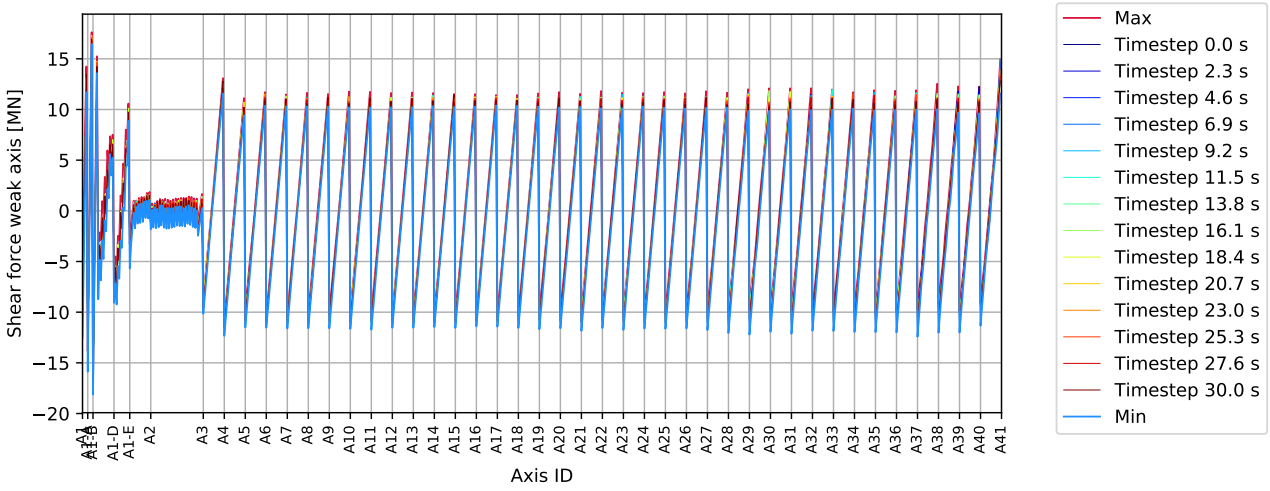

Figure 3.1111: P A38 80deg - bridgegirder : Shear force weak axis [MN]

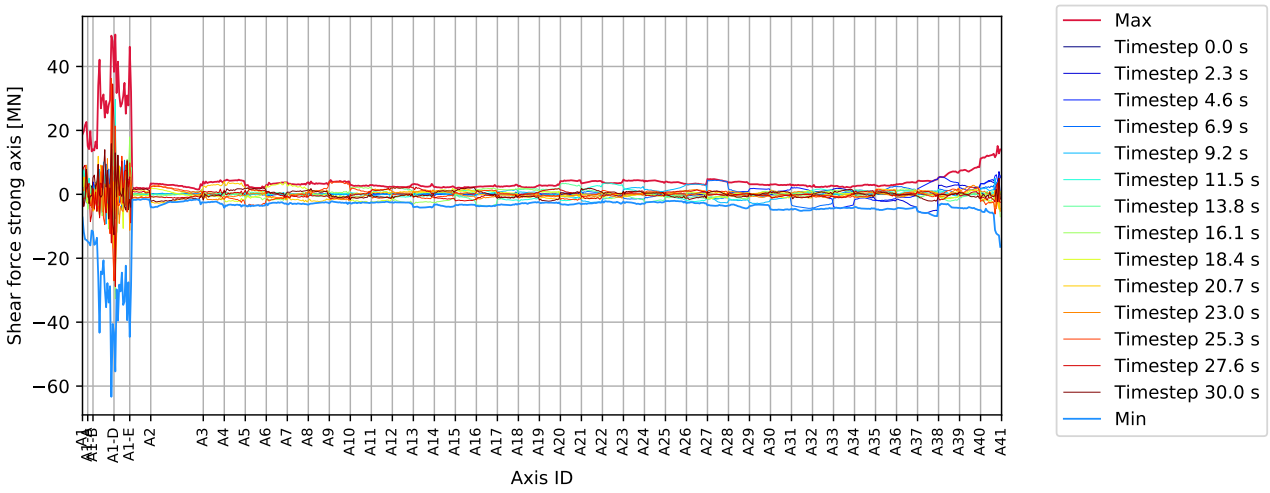

Figure 3.1112: P A38 80deg - bridgegirder : Shear force strong axis [MN]

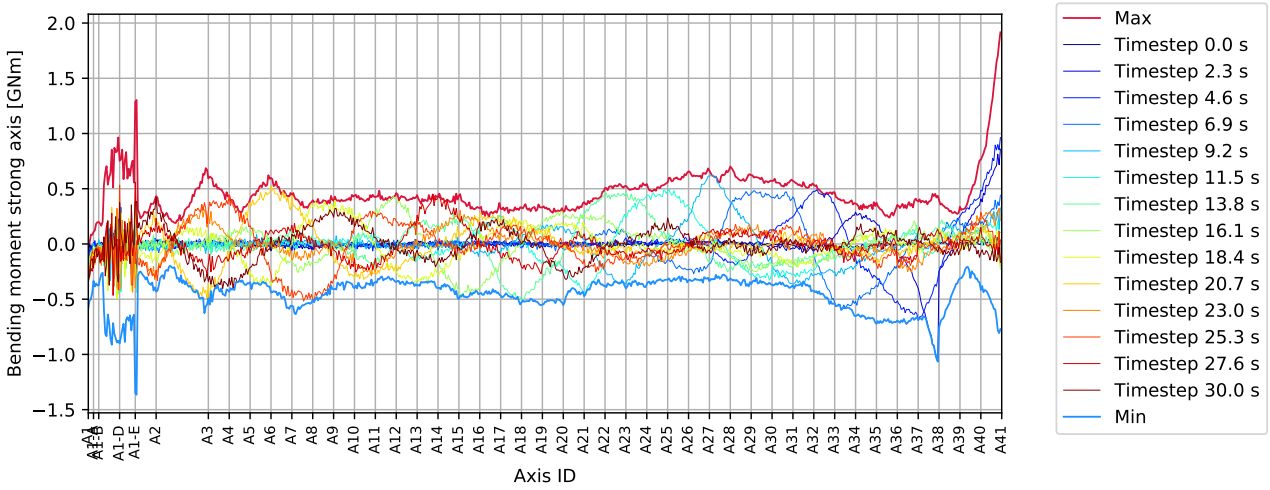

Figure 3.1113: P A38 80deg - bridgegirder : Bending moment strong axis [GNm]

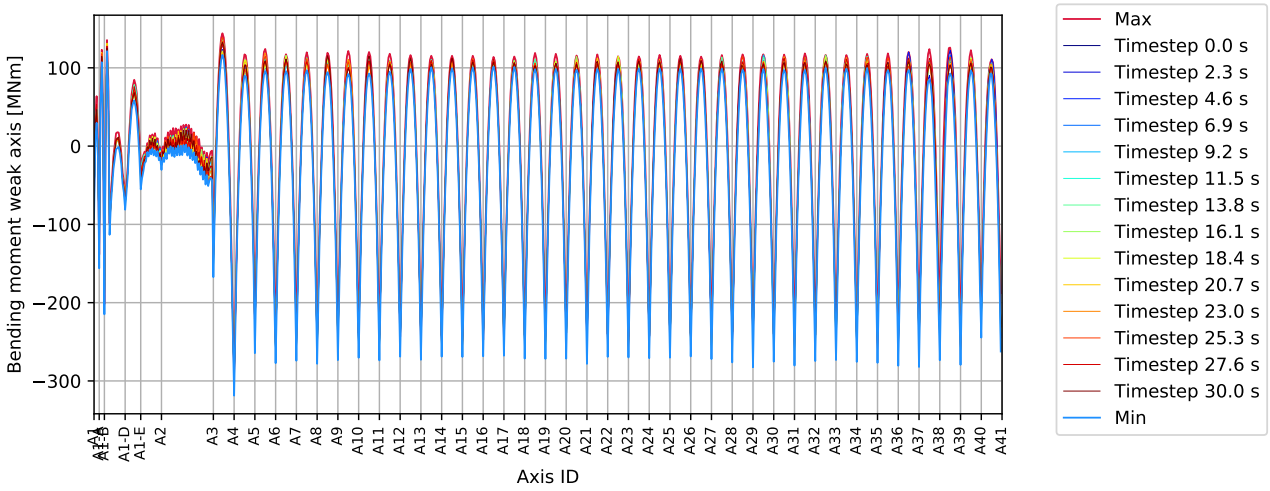

Figure 3.1114: P A38 80deg - bridgegirder : Bending moment weak axis [MNm]

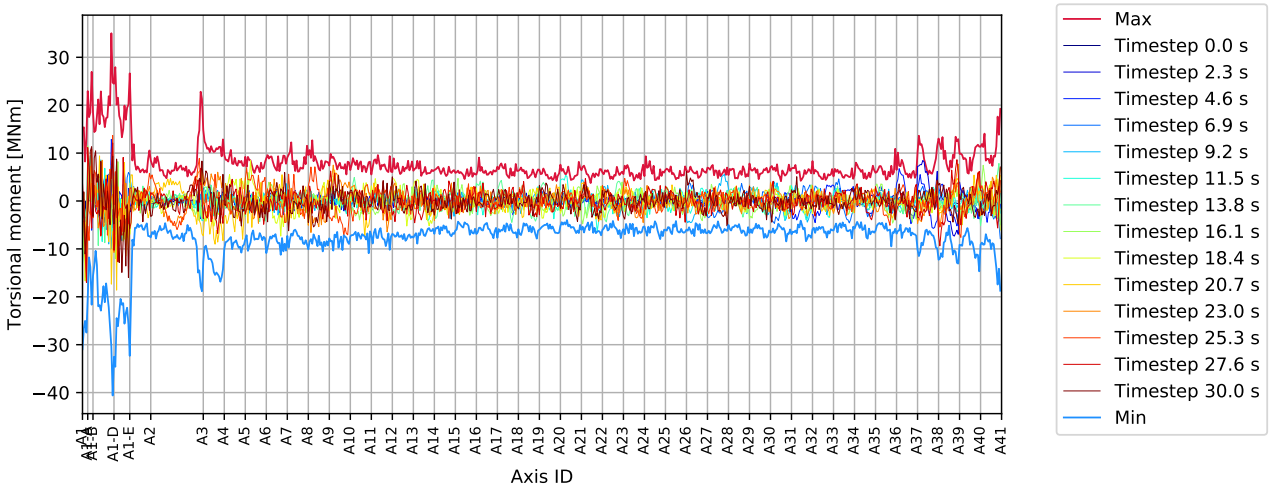

Figure 3.1115: P A38 80deg - bridgegirder : Torsional moment [MNm]

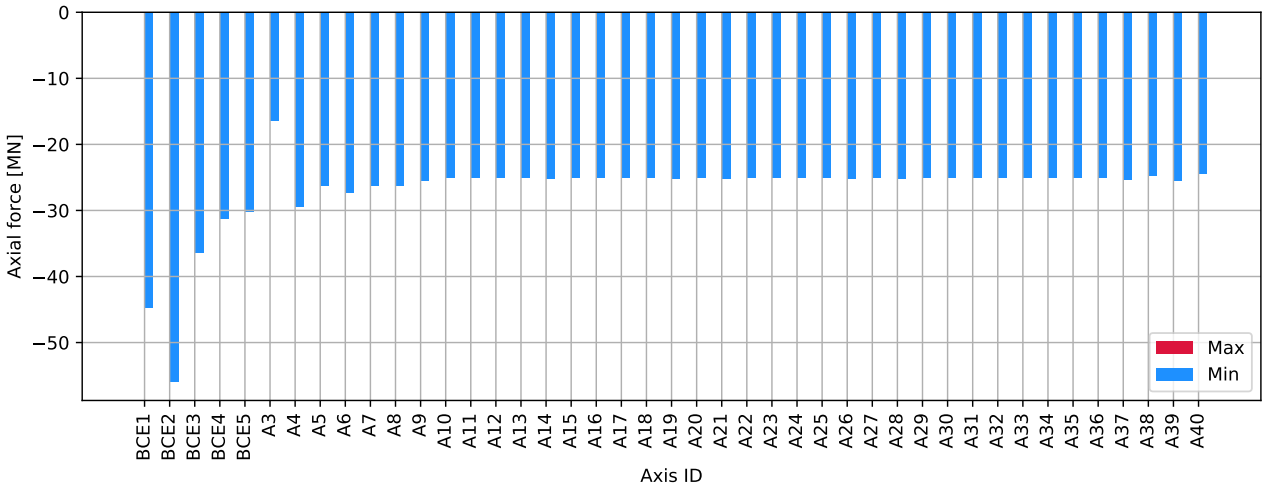

Figure 3.1116: P A38 80deg - columns bottom : Axial force [MN]

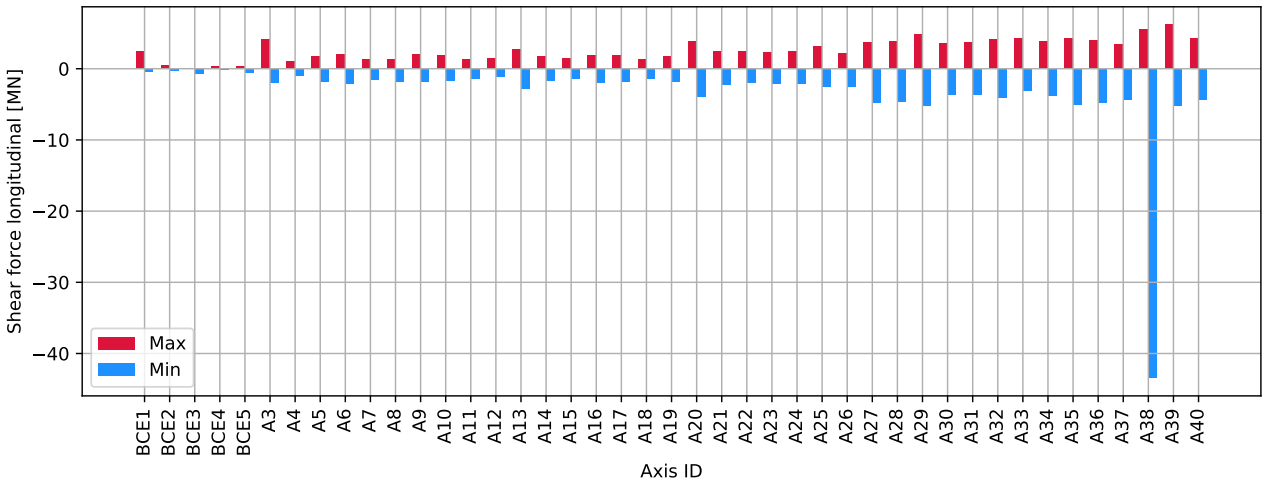

Figure 3.1117: P A38 80deg - columns bottom : Shear force longitudinal [MN]

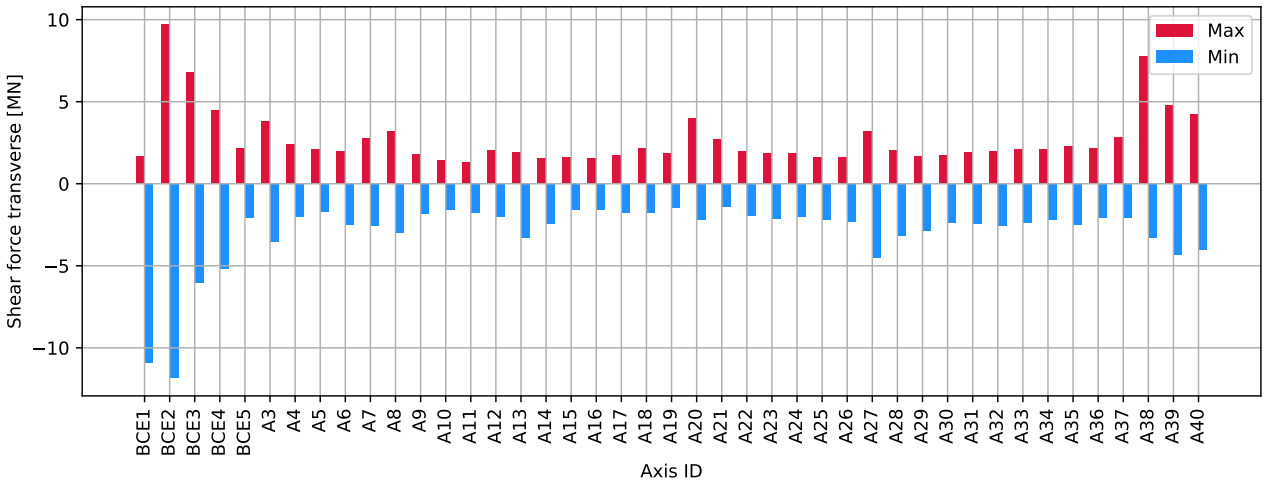

Figure 3.1118: P A38 80deg - columns bottom : Shear force transverse [MN]

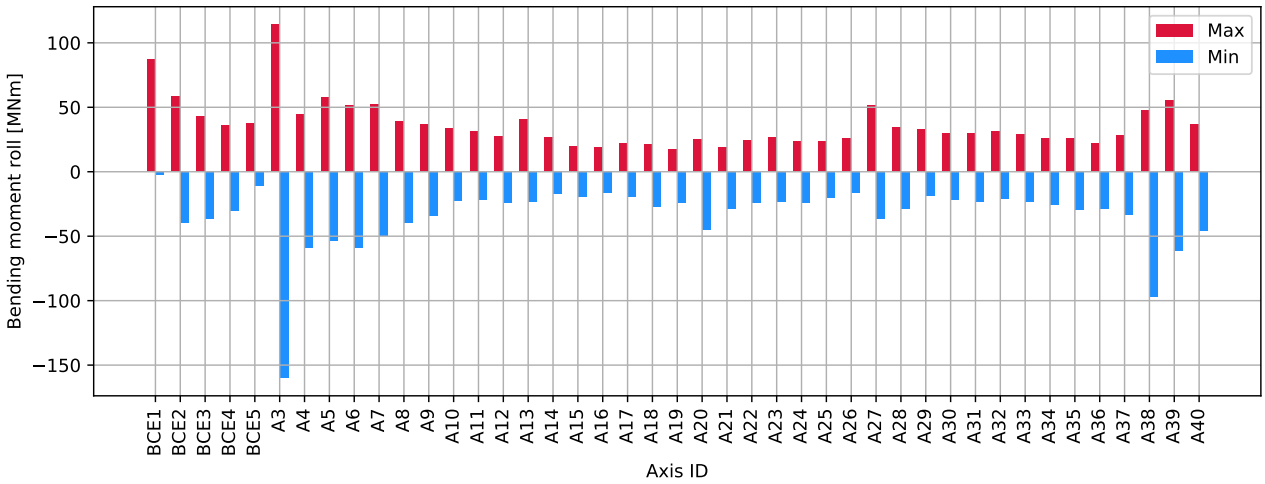

Figure 3.1119: P A38 80deg - columns bottom : Bending moment roll [MNm]

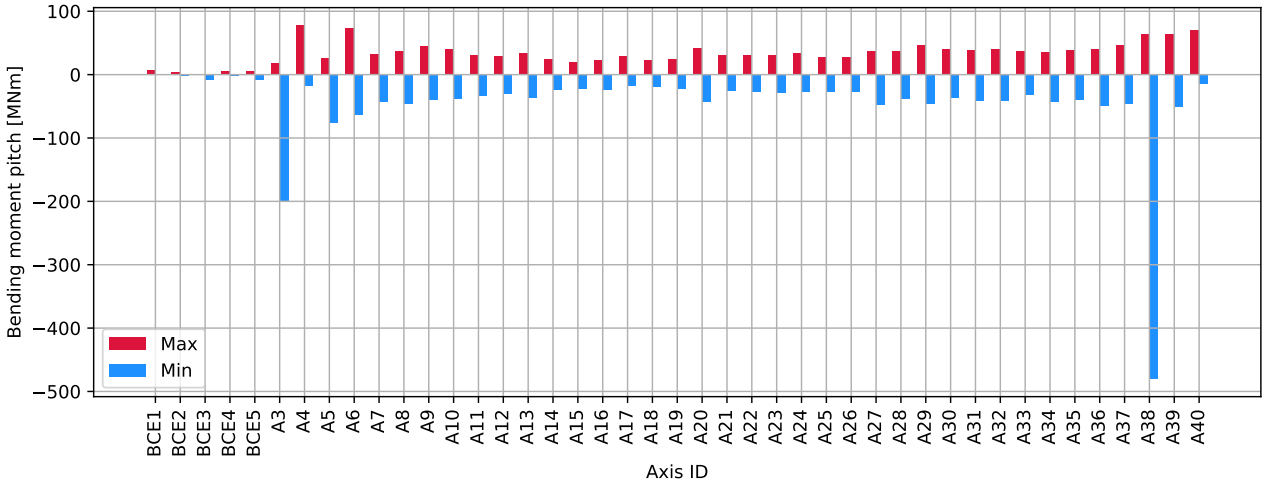

Figure 3.1120: P A38 80deg - columns bottom : Bending moment pitch [MNm]

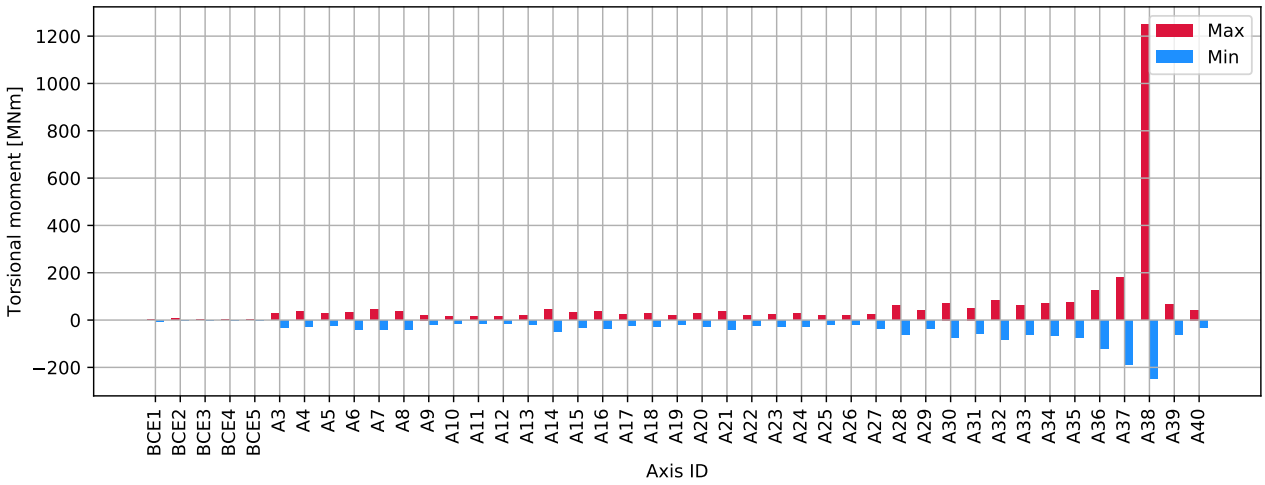

Figure 3.1121: P A38 80deg - columns bottom : Torsional moment [MNm]

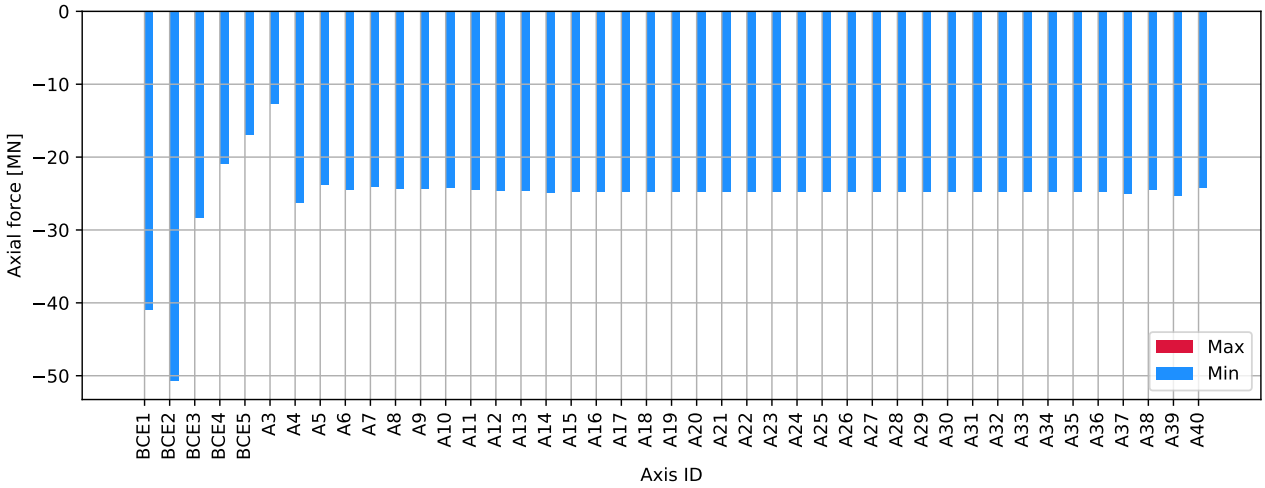

Figure 3.1122: P A38 80deg - columns top : Axial force [MN]

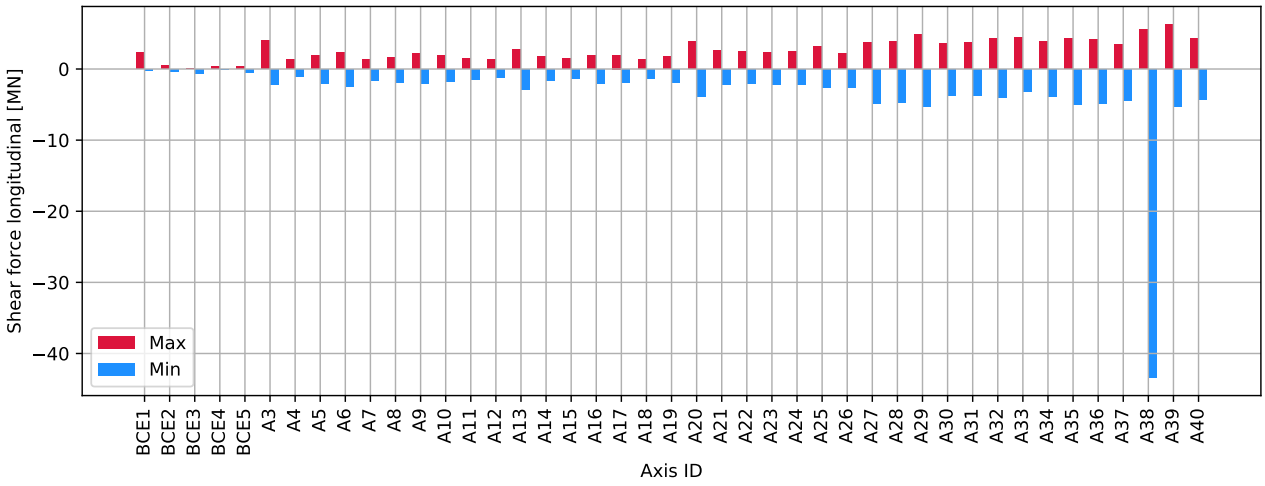

Figure 3.1123: P A38 80deg - columns top : Shear force longitudinal [MN]

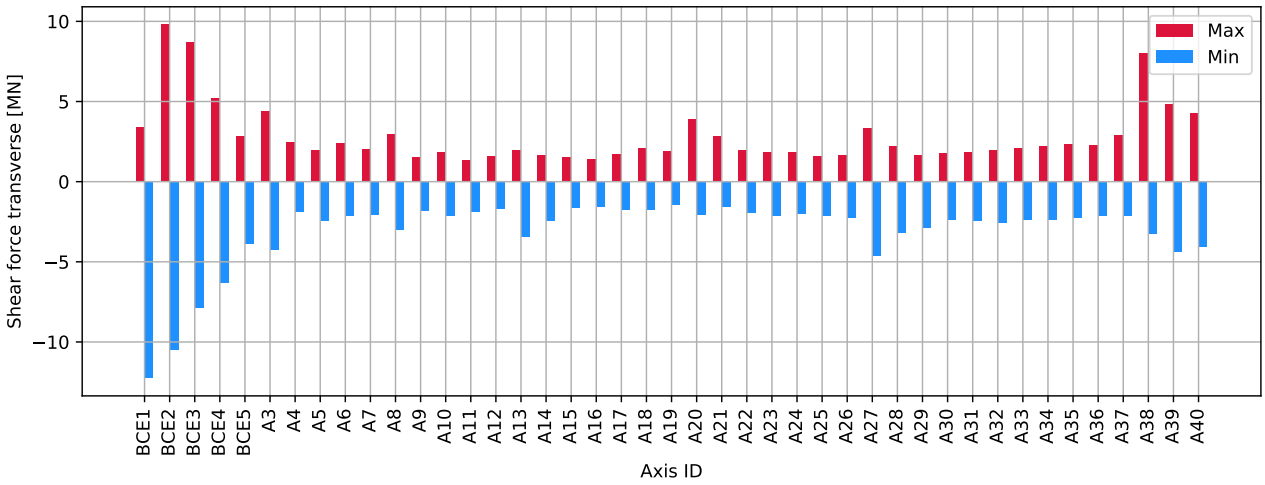

Figure 3.1124: P A38 80deg - columns top : Shear force transverse [MN]

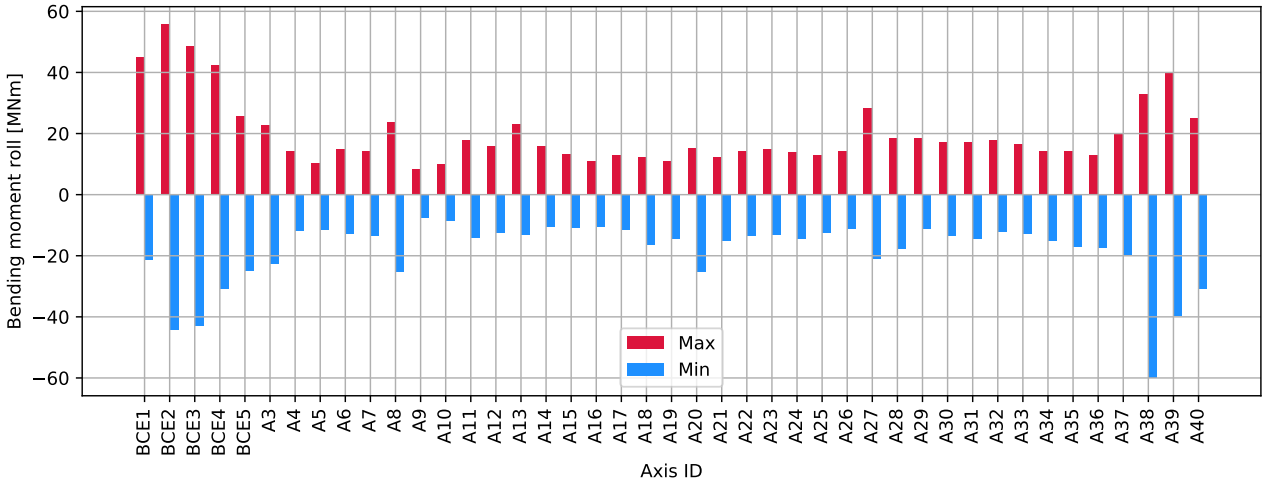

Figure 3.1125: P A38 80deg - columns top : Bending moment roll [MNm]

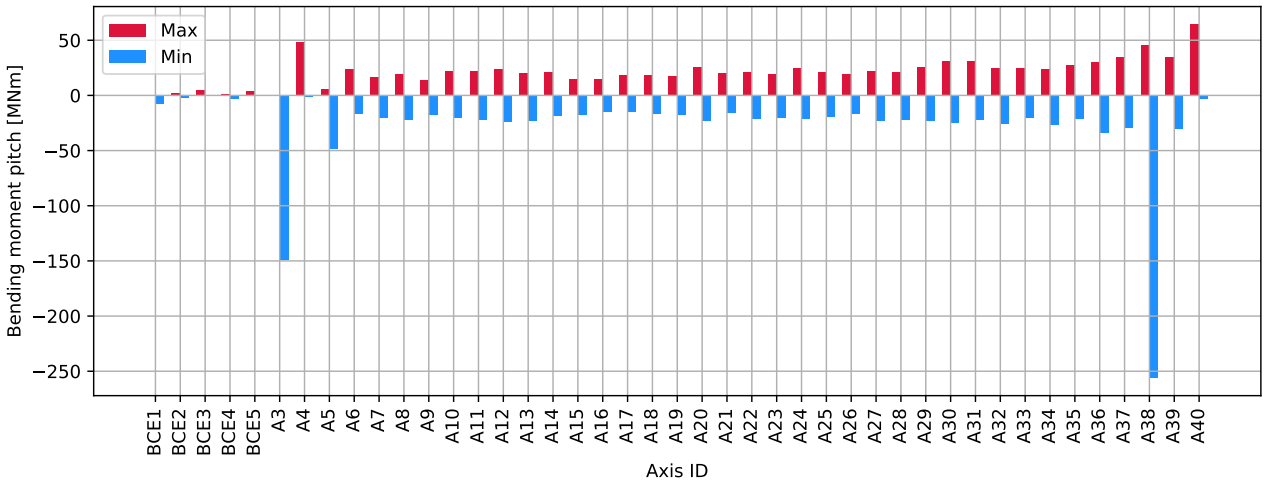

Figure 3.1126: P A38 80deg - columns top : Bending moment pitch [MNm]

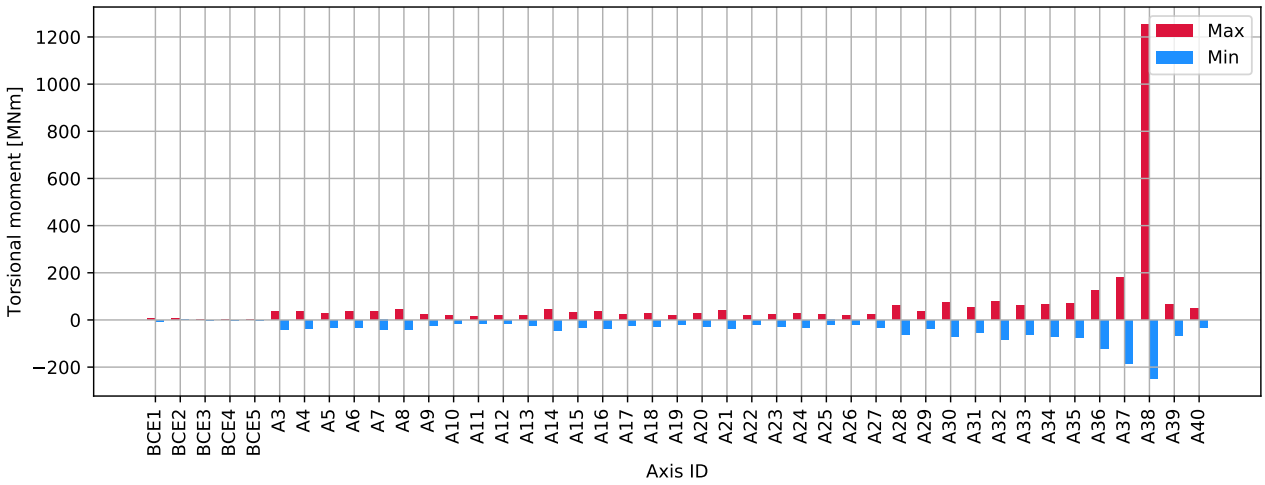

Figure 3.1127: P A38 80deg - columns top : Torsional moment [MNm]

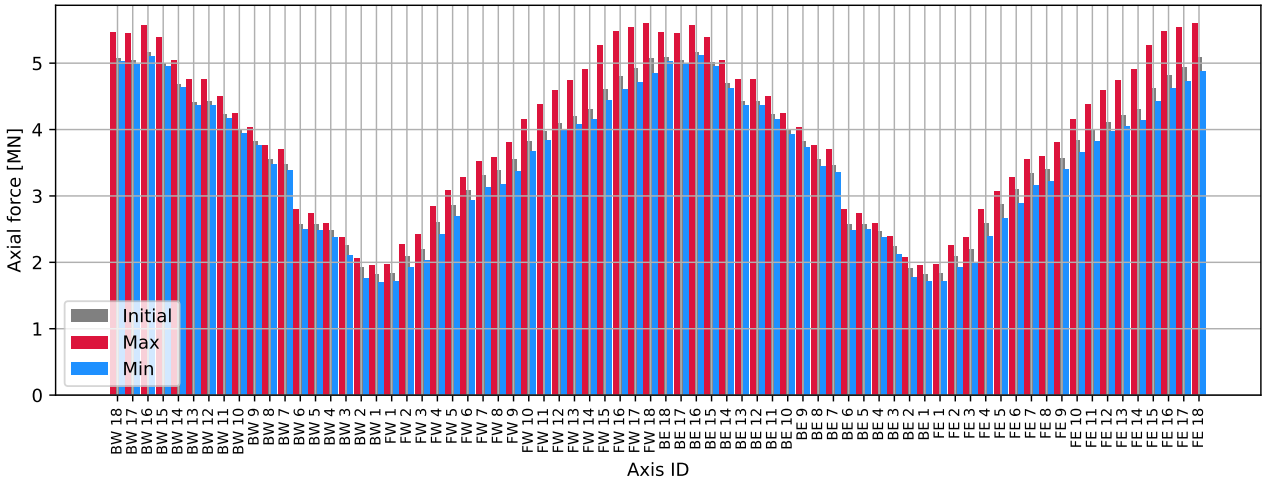

Figure 3.1128: P A38 80deg - cables : Axial force [MN]

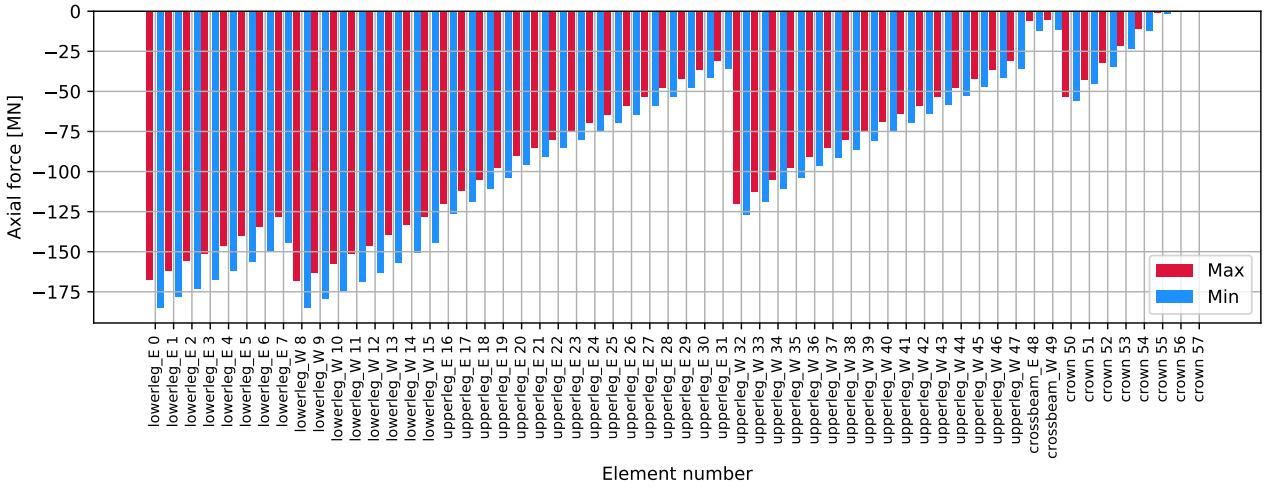

Figure 3.1129: P A38 80deg - tower: Axial force [MN]

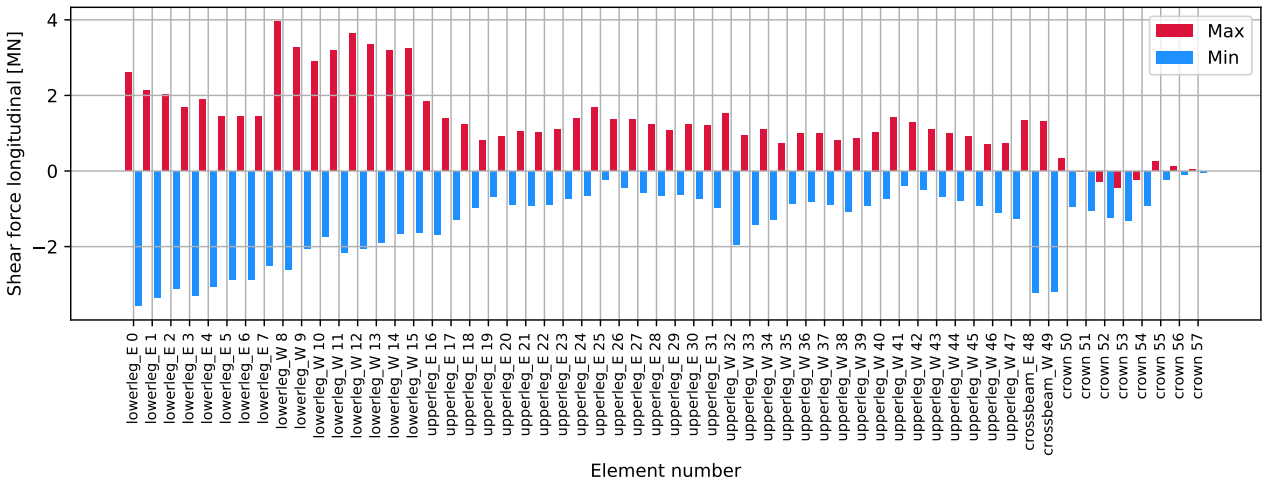

Figure 3.1130: P A38 80deg - tower: Shear force longitudinal [MN]

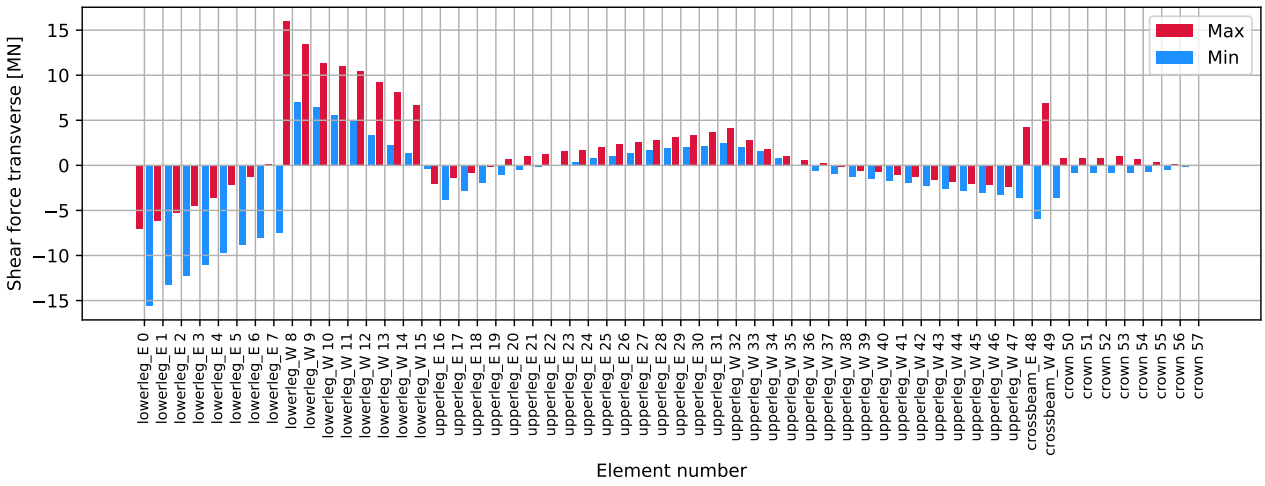

Figure 3.1131: P A38 80deg - tower: Shear force transverse [MN]

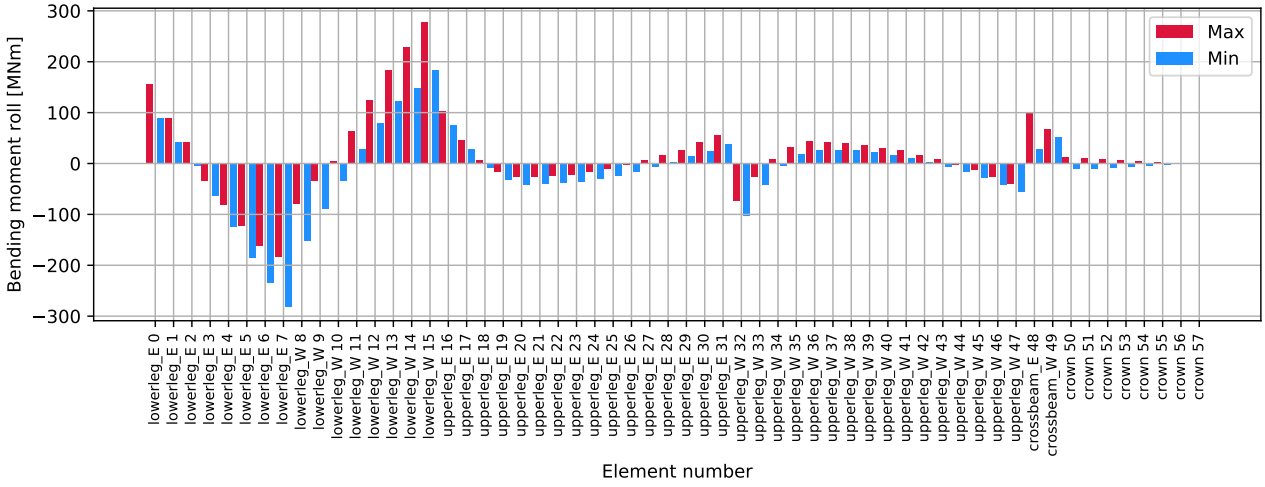

Figure 3.1132: P A38 80deg - tower: Bending moment roll [MNm]

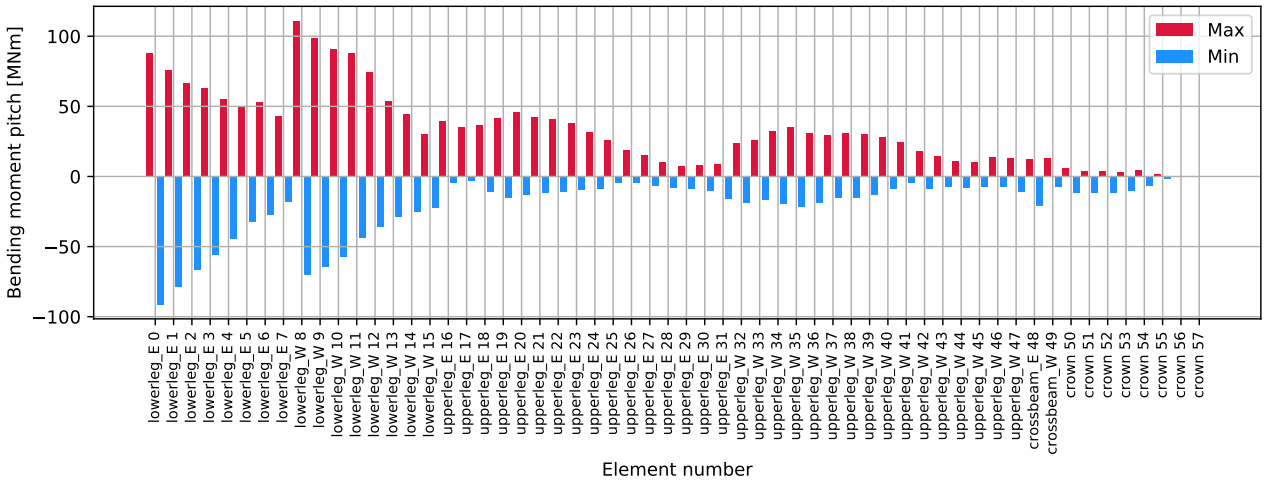

Figure 3.1133: P A38 80deg - tower: Bending moment pitch [MNm]

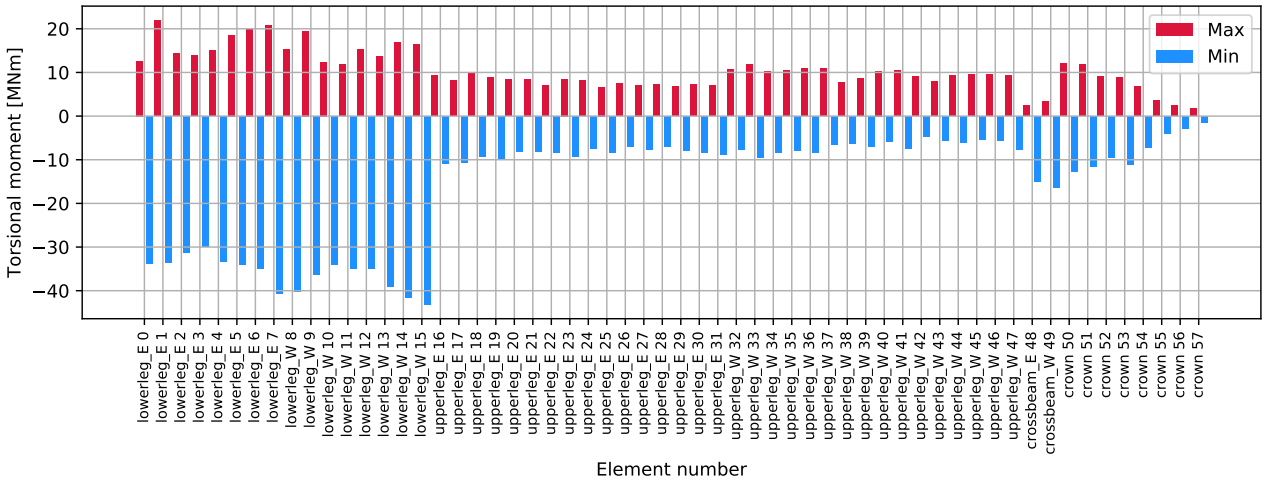

Figure 3.1134: P A38 80deg - tower: Torsional moment [MNm]

3.25.3 Time series

Note : Time series are filtered using a Saviotzky-Golay filter for increased readability of the time history plots. Hence, maximum values that occur due to a rapid vibration are not shown in the plots. For maximum values, refer to the tabulated data.
All elements are numbered from South to North, bottom to top

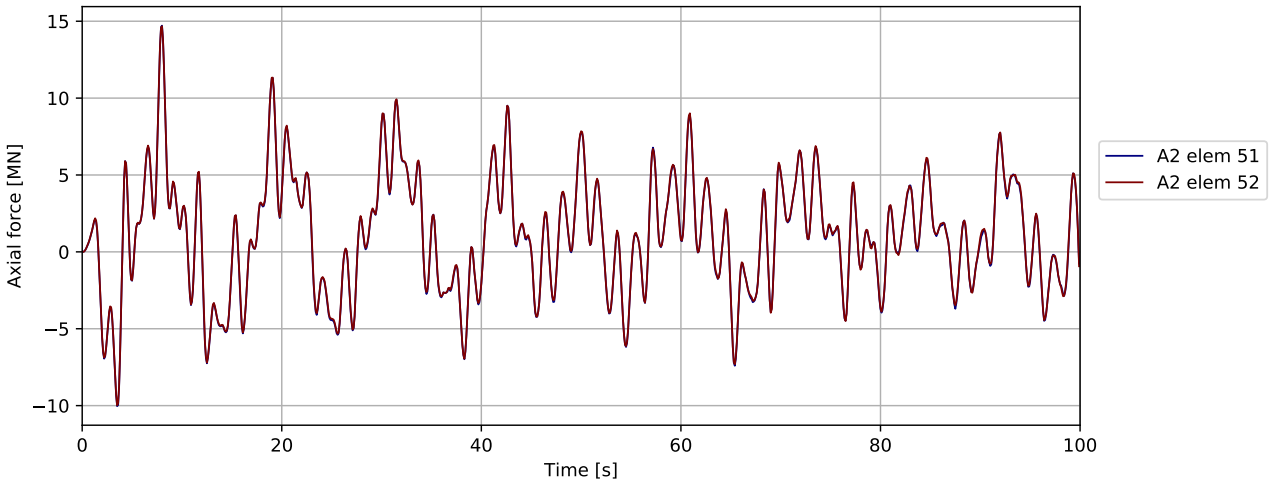

Figure 3.1135: P A38 80deg - bridgegirder @ pylon: Axial force [MN]

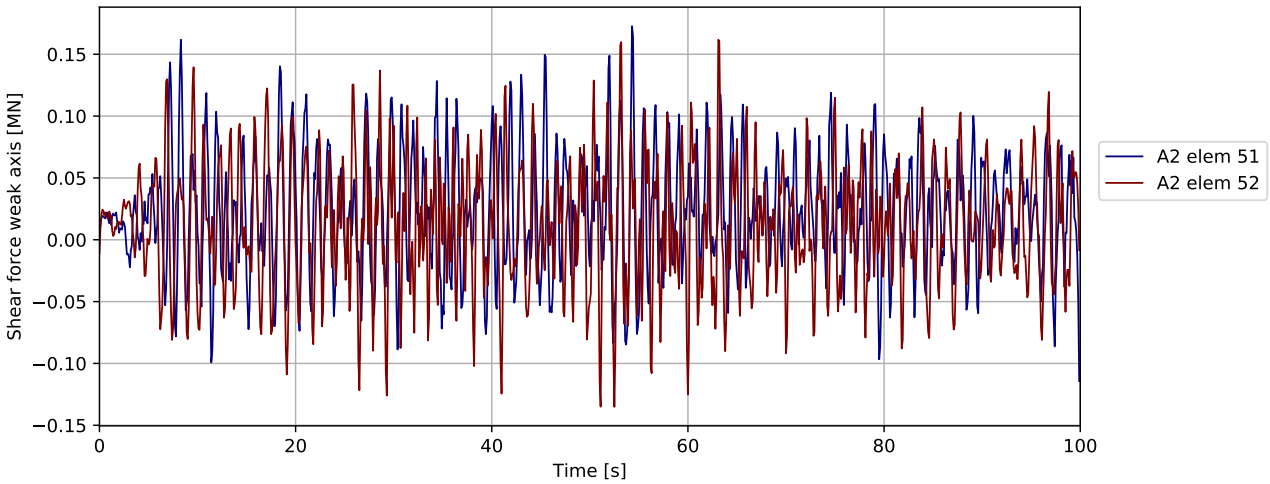

Figure 3.1136: P A38 80deg - bridgegirder @ pylon: Shear force weak axis [MN]

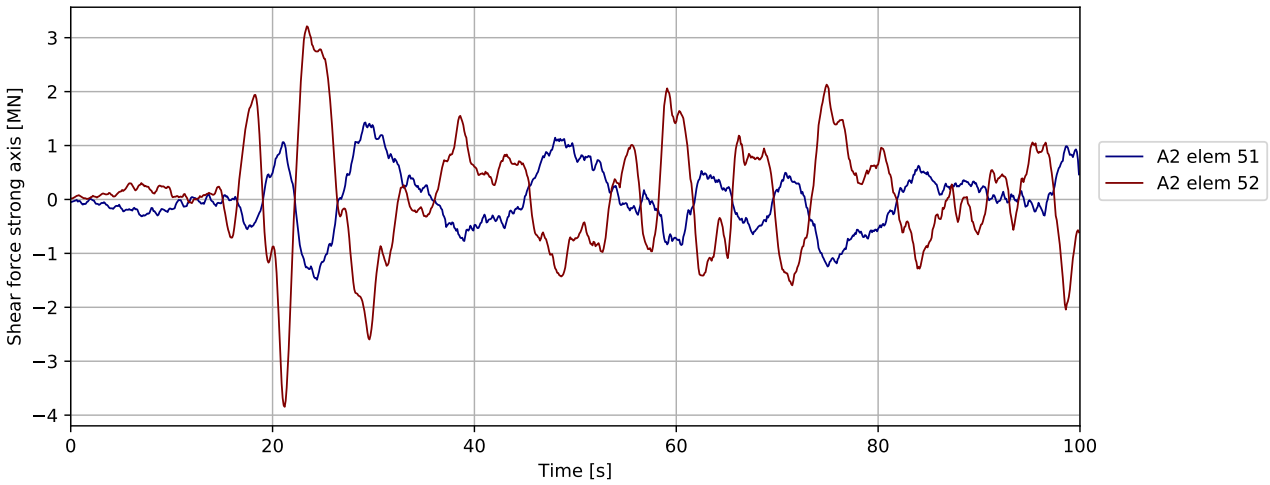

Figure 3.1137: P A38 80deg - bridgegirder @ pylon: Shear force strong axis [MN]

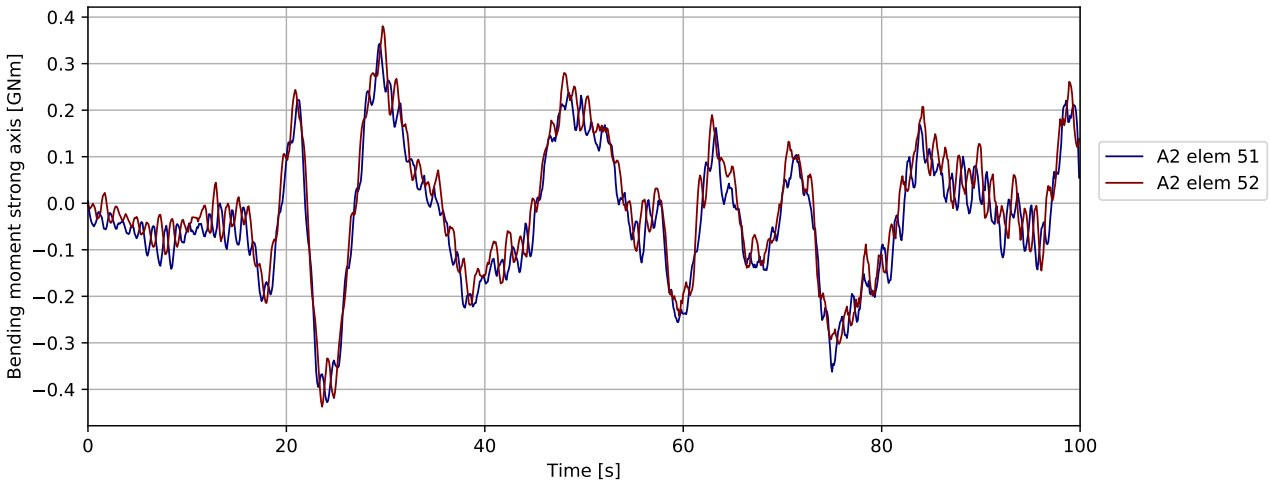

Figure 3.1138: P A38 80deg - bridgegirder @ pylon: Bending moment strong axis [GNm]

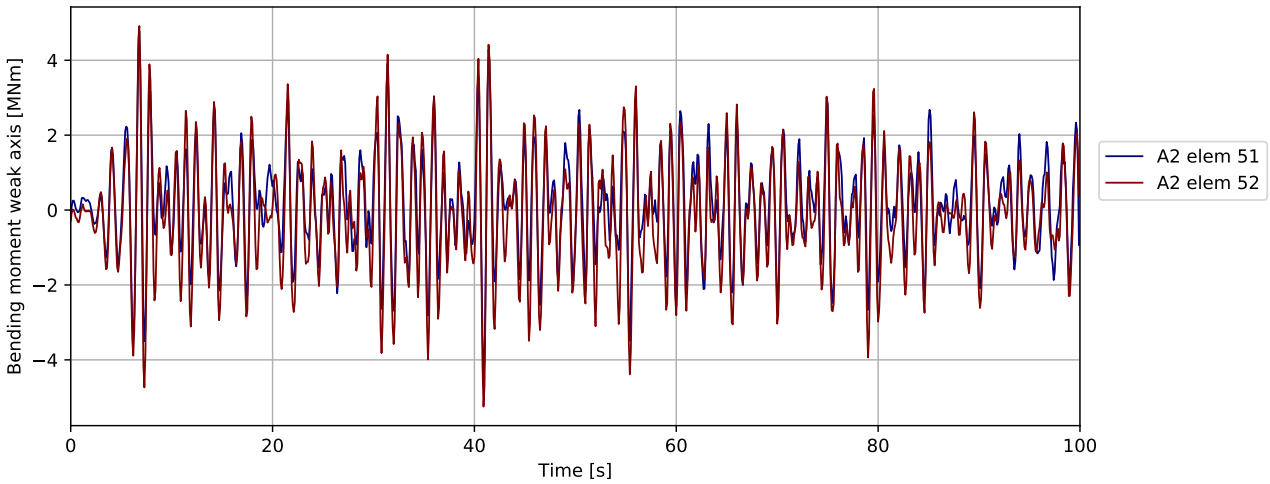

Figure 3.1139: P A38 80deg - bridgegirder @ pylon: Bending moment weak axis [MNm]

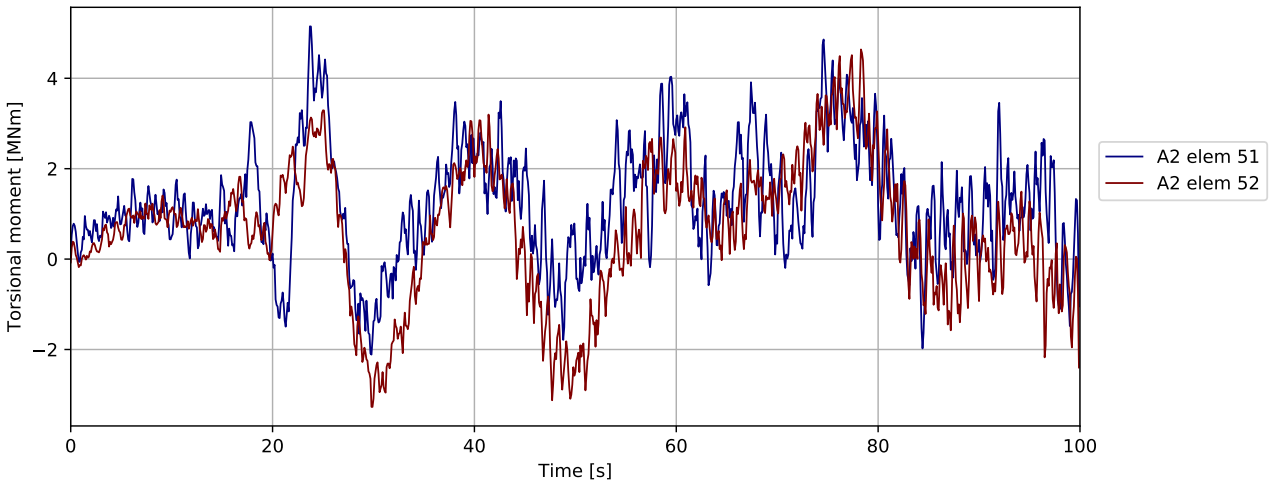

Figure 3.1140: P A38 80deg - bridgegirder @ pylon: Torsional moment [MNm]

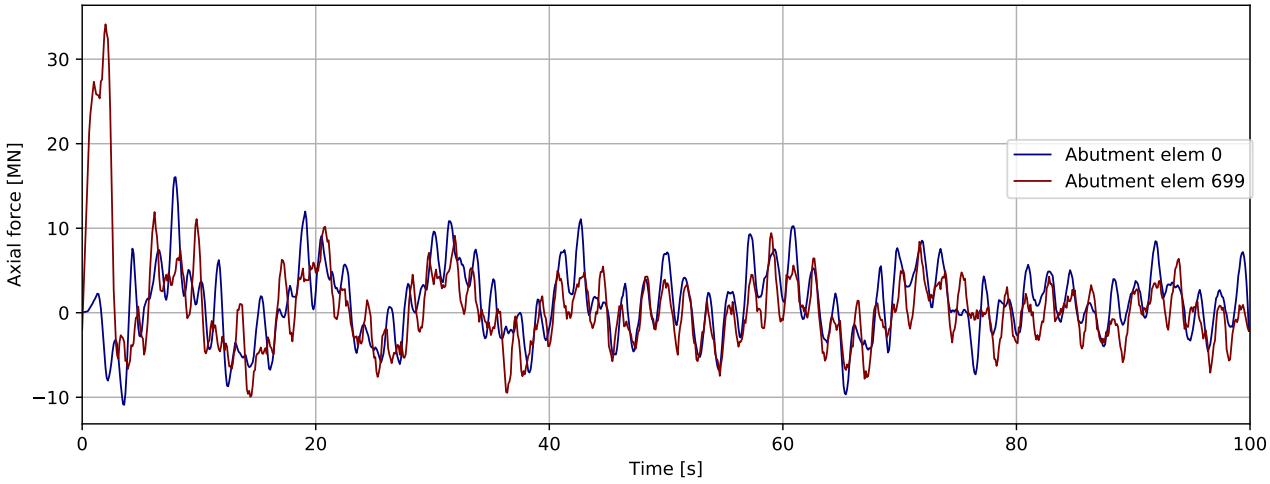

Figure 3.1141: P A38 80deg - bridgegirder @abutments: Axial force [MN]

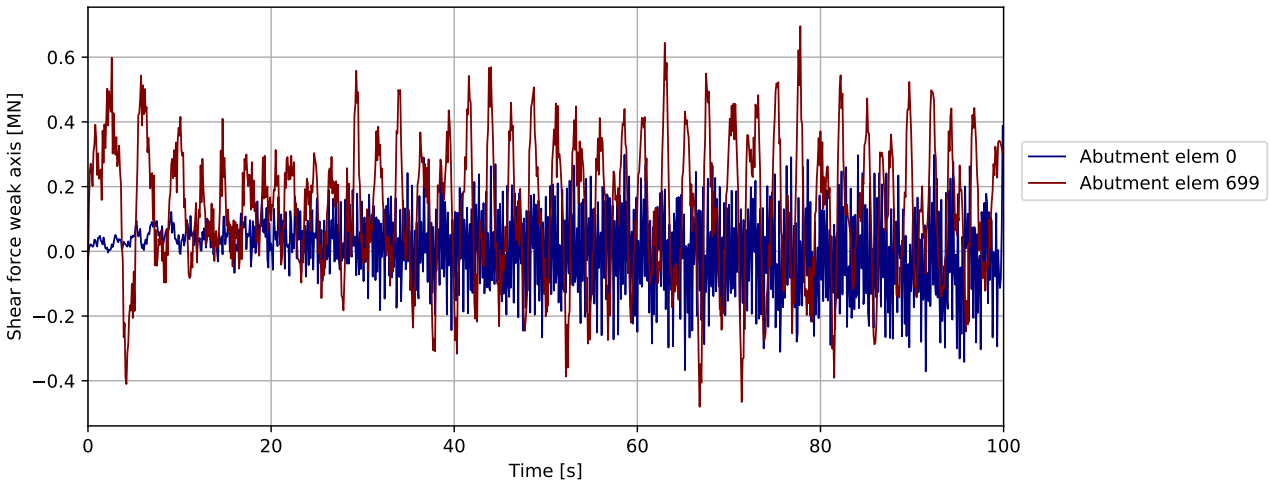

Figure 3.1142: P A38 80deg - bridgegirder @abutments: Shear force weak axis [MN]

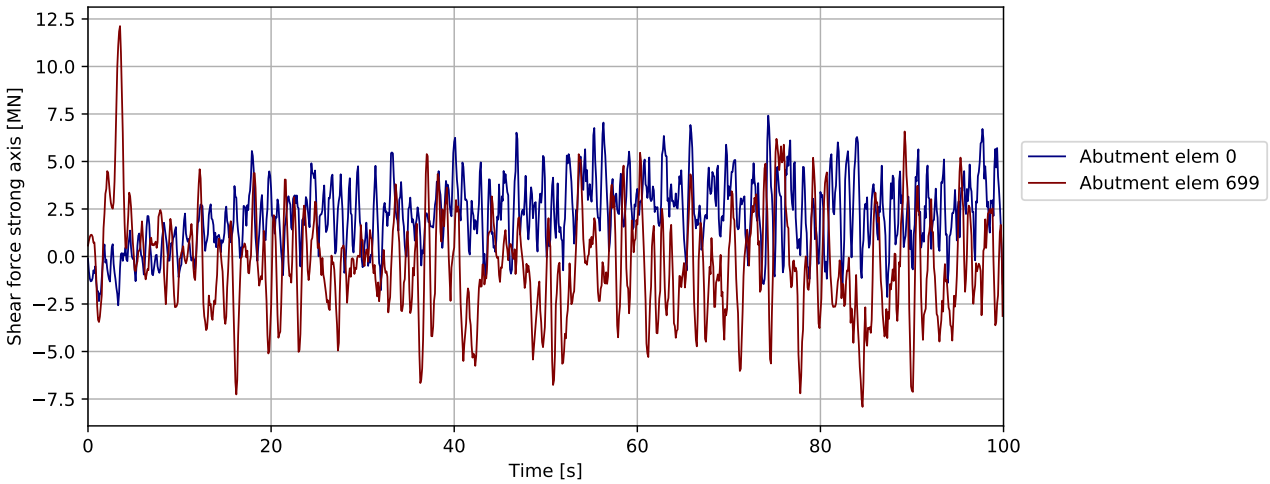

Figure 3.1143: P A38 80deg - bridgegirder @abutments: Shear force strong axis [MN]

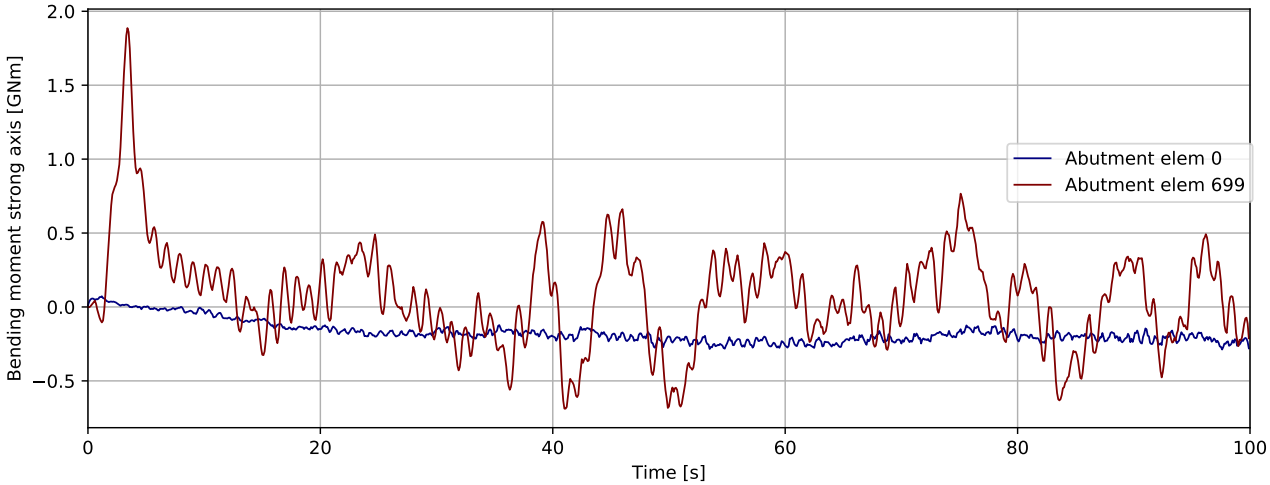

Figure 3.1144: P A38 80deg - bridgegirder @abutments: Bending moment strong axis [GNm]

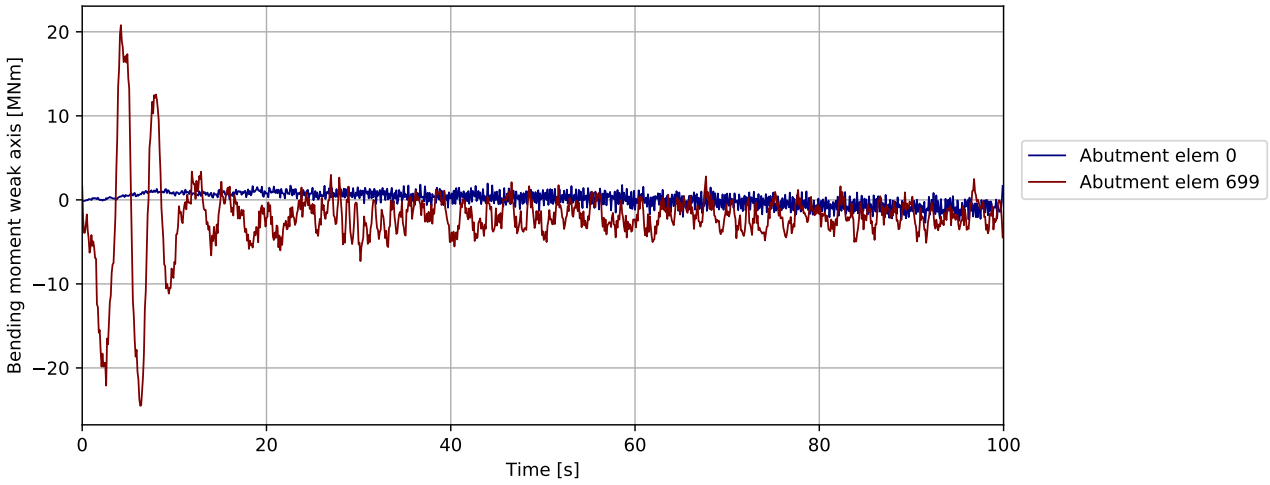

Figure 3.1145: P A38 80deg - bridgegirder @abutments: Bending moment weak axis [MNm]

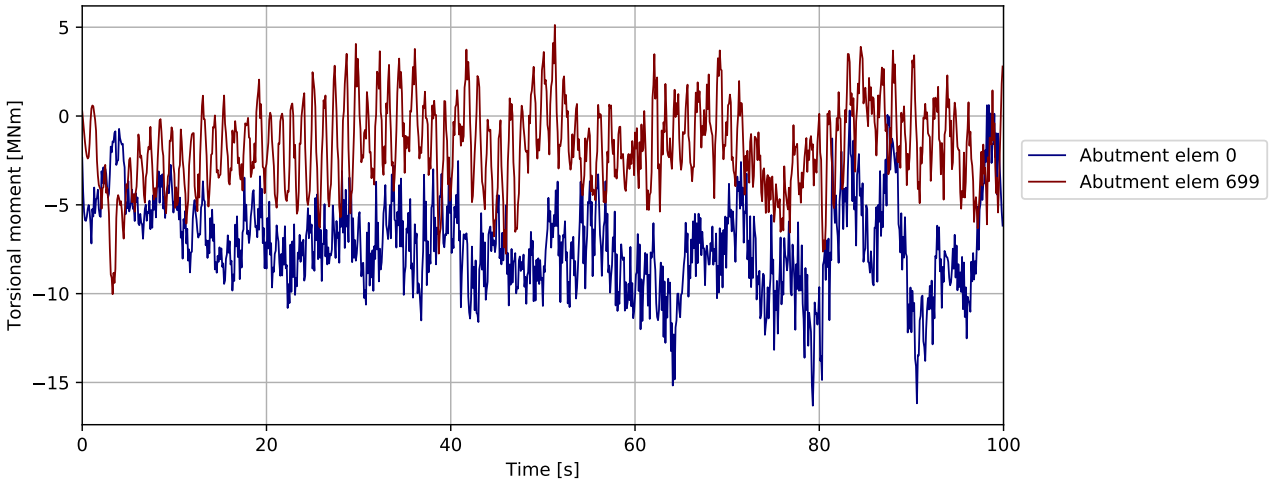

Figure 3.1146: P A38 80deg - bridgegirder @abutments: Torsional moment [MNm]

Note : Compressive spring force is negative

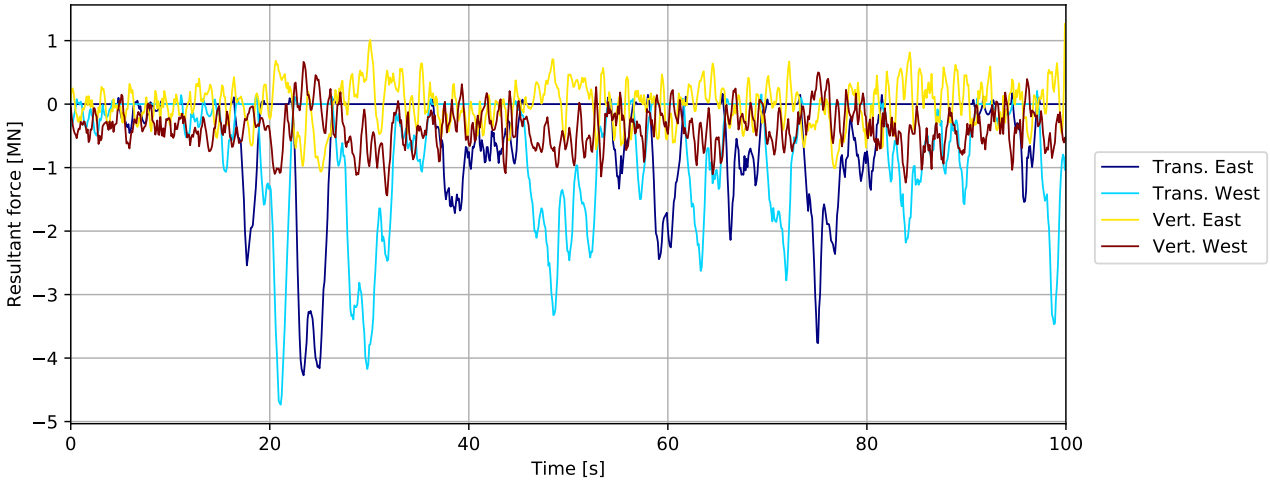

Figure 3.1147: P A38 80deg - bridgegirder supports in tower: Resultant force [MN]

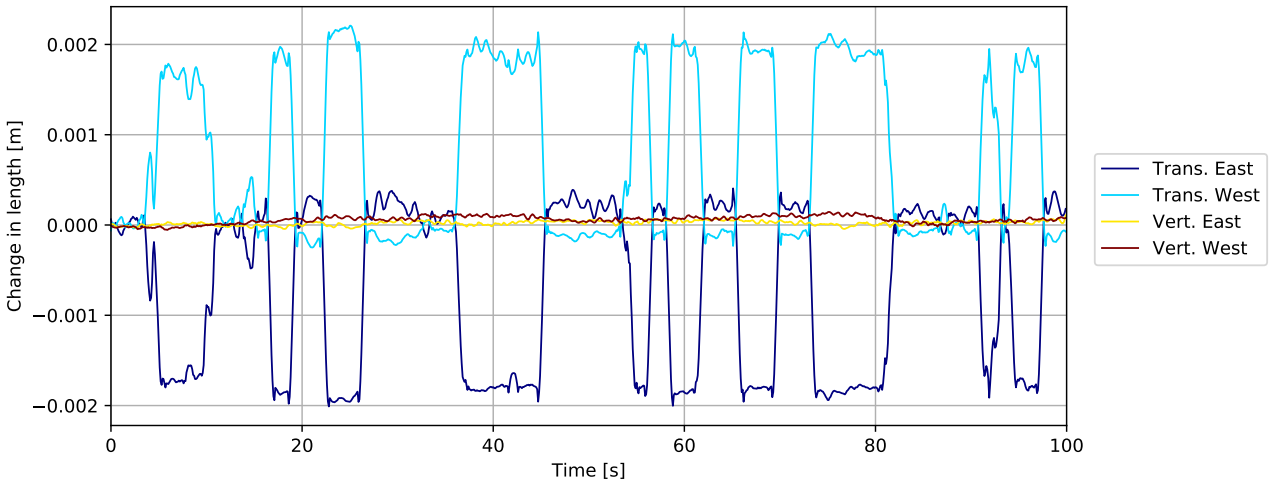

Figure 3.1148: P A38 80deg - bridgegirder supports in tower: Change in length [m]

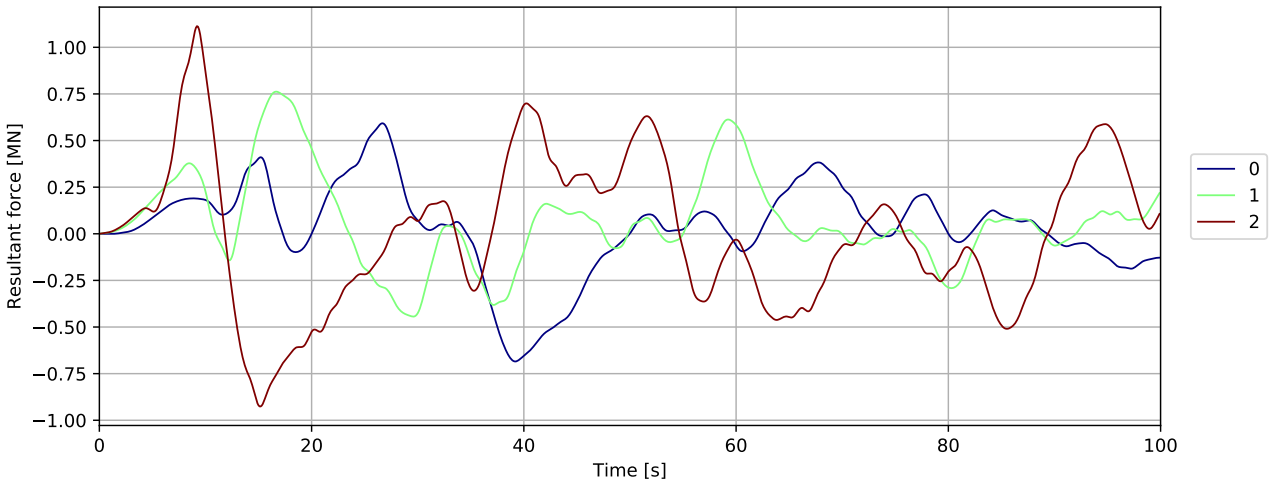

Figure 3.1149: Mooring force

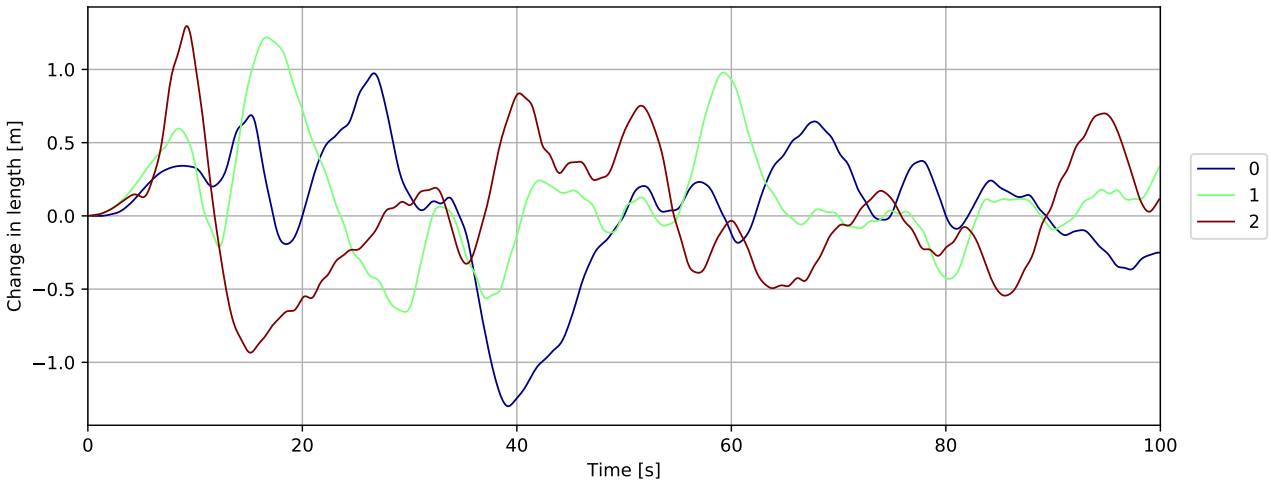

Figure 3.1150: Mooring displacement

3.26 PontoonA39 80deg

3.26.1 Overall response

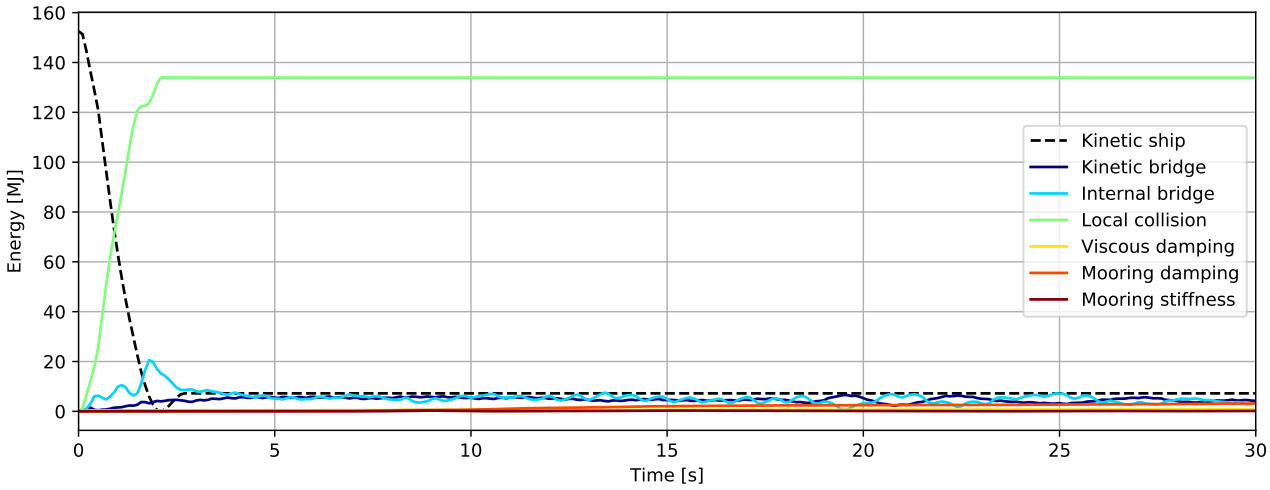

Figure 3.1151: Energy [MJ] - initial phase

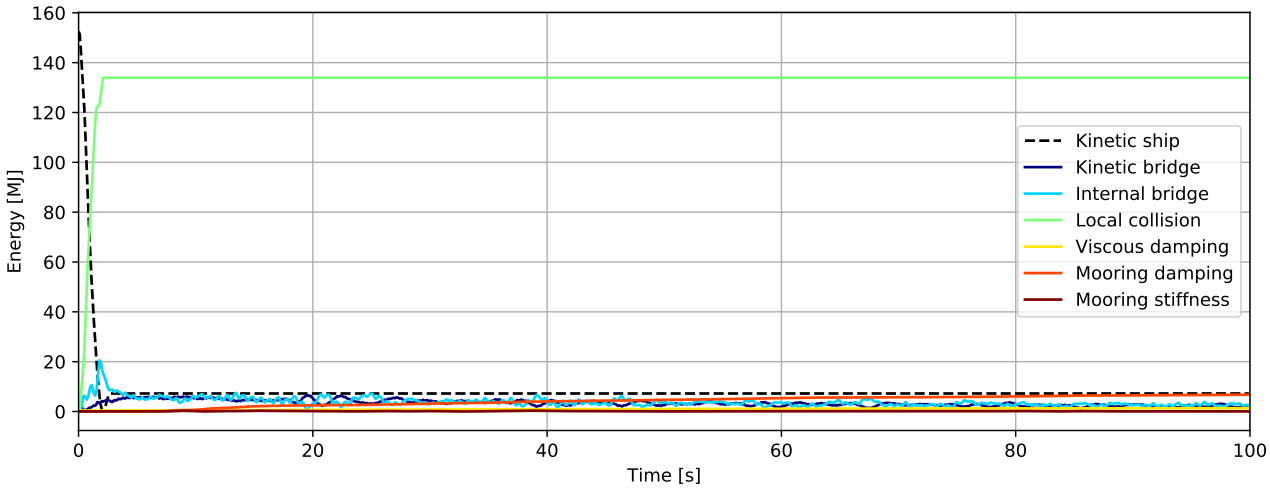

Figure 3.1152: Energy [MJ]

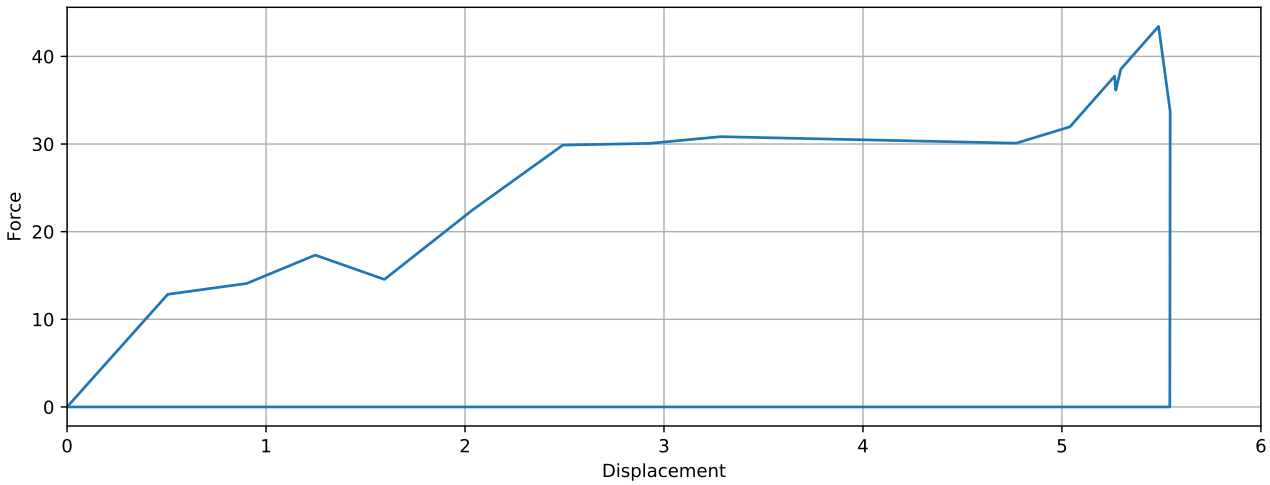

Figure 3.1153: Simulated local collision force-displacement

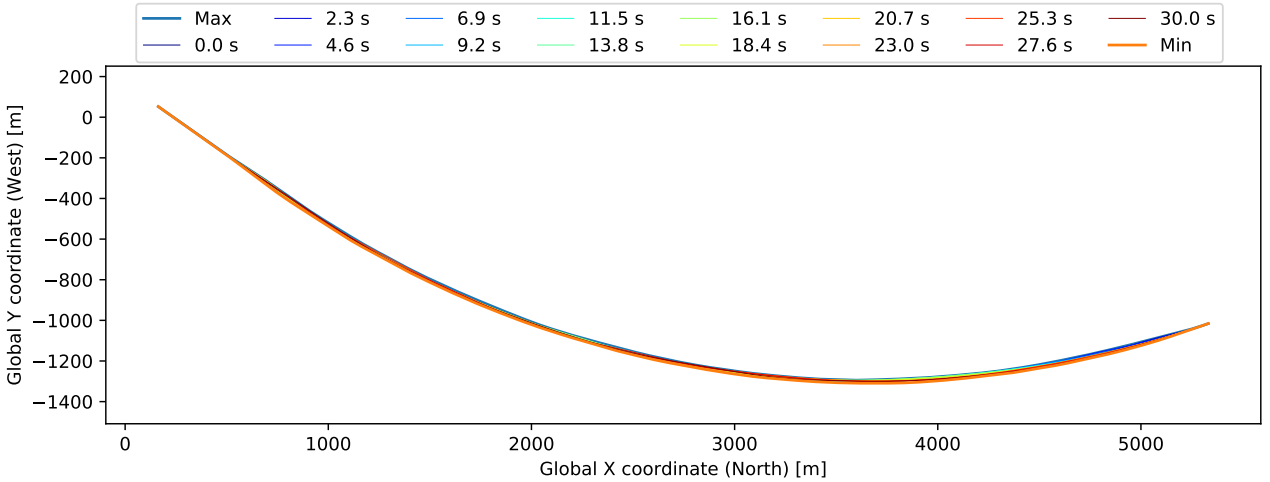

Figure 3.1154: Bridgegirder deflection (10x displacment scaling)

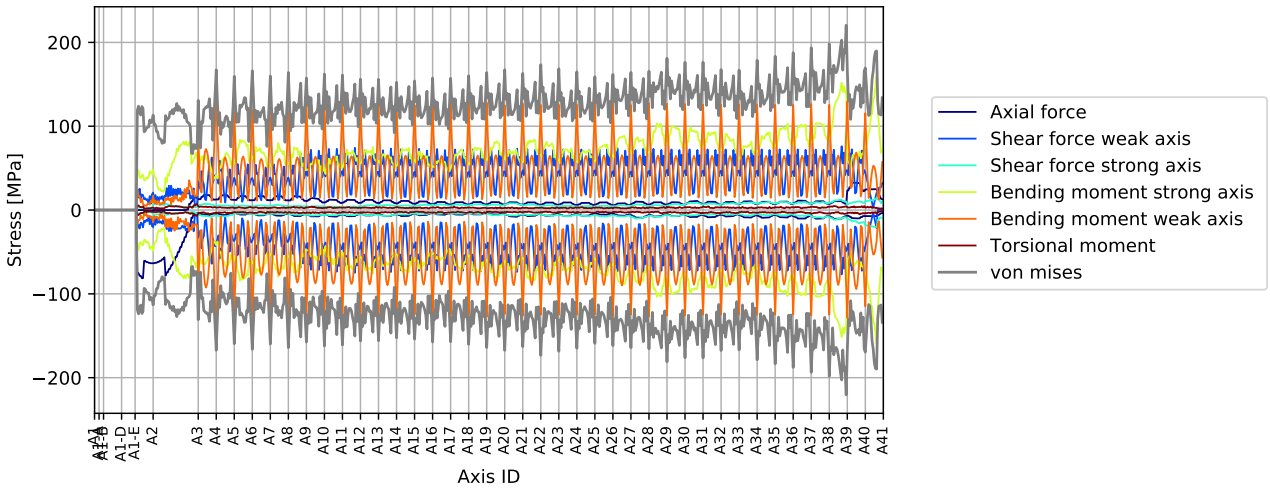

Figure 3.1155: Stress envelope from all force components

3.26.2 Envelope plots

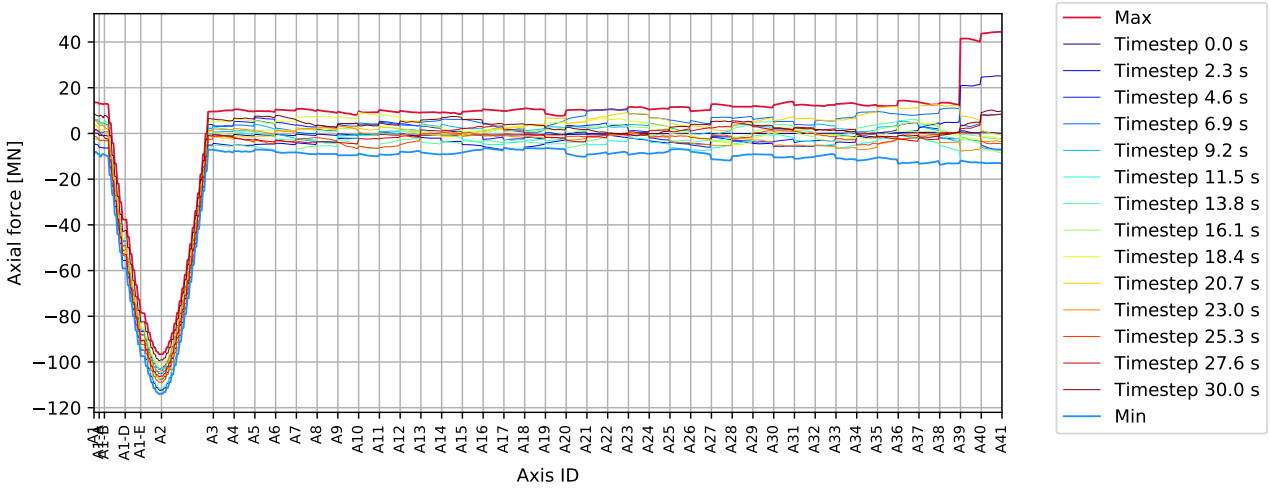

Figure 3.1156: P A39 80deg - bridgegirder : Axial force [MN]

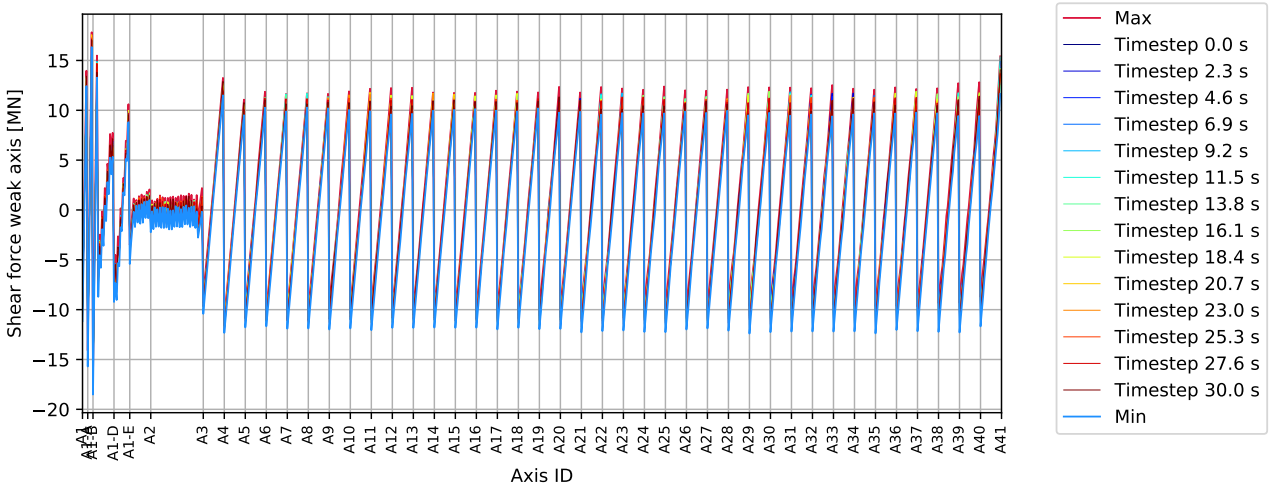

Figure 3.1157: P A39 80deg - bridgegirder : Shear force weak axis [MN]

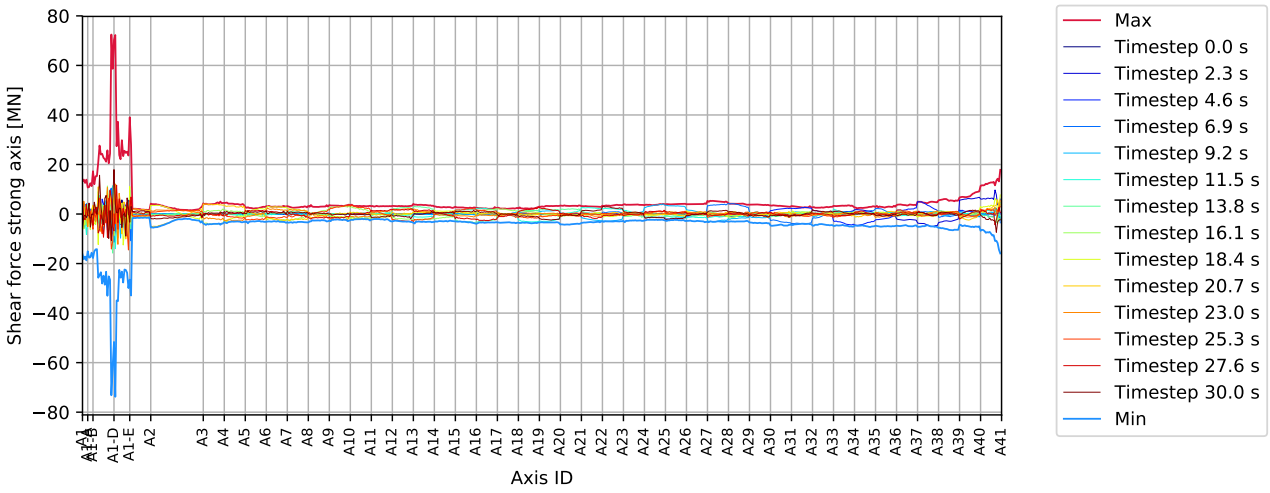

Figure 3.1158: P A39 80deg - bridgegirder : Shear force strong axis [MN]

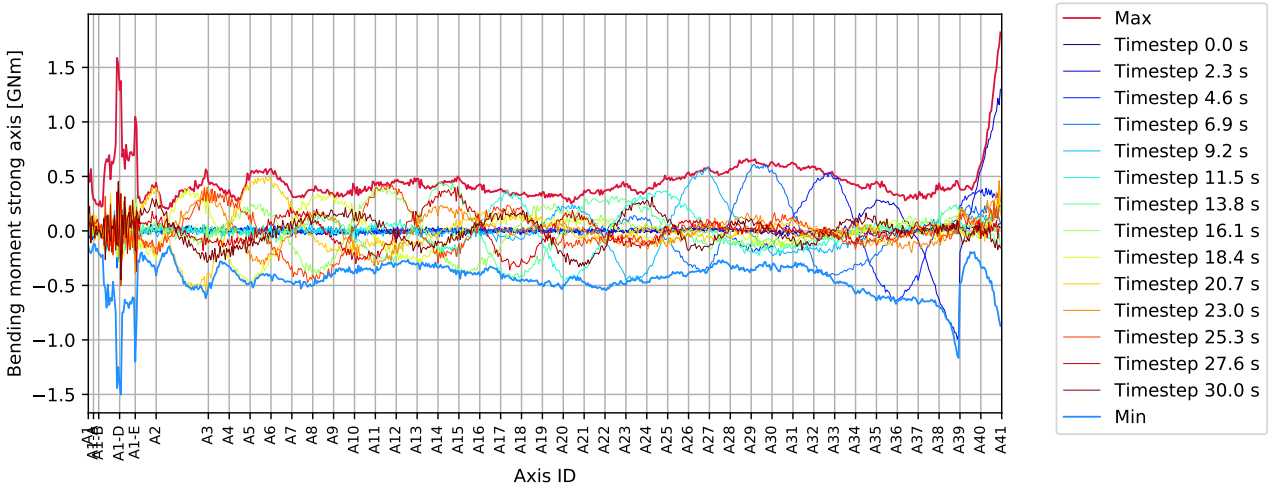

Figure 3.1159: P A39 80deg - bridgegirder : Bending moment strong axis [GNm]

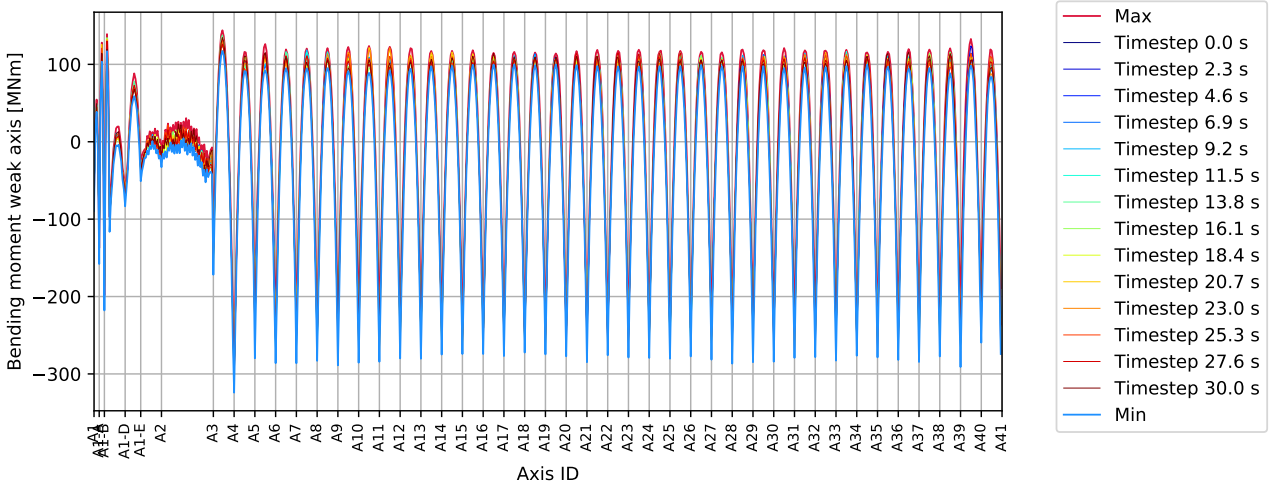

Figure 3.1160: P A39 80deg - bridgegirder : Bending moment weak axis [MNm]

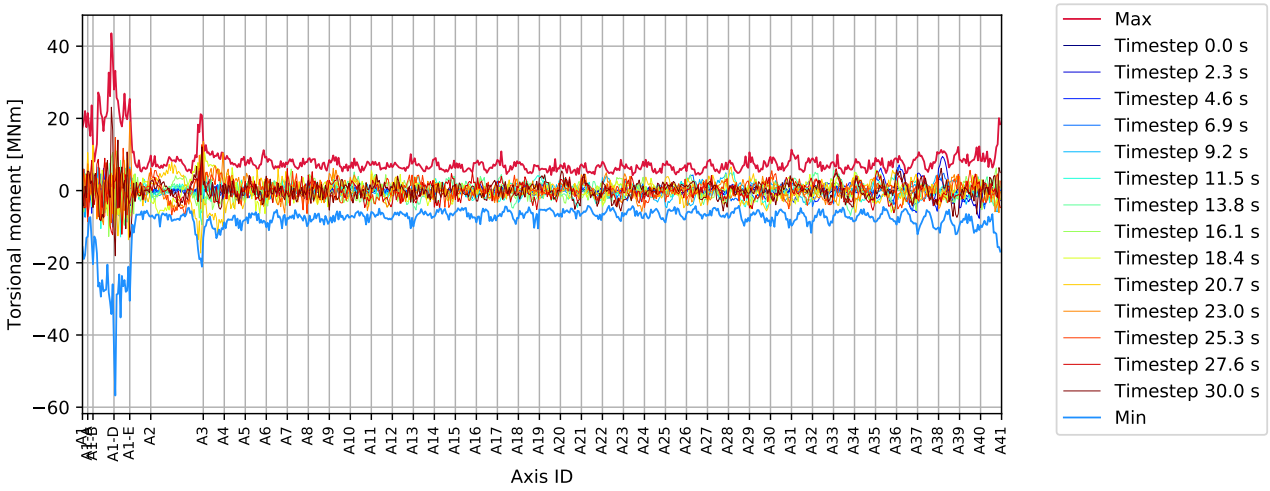

Figure 3.1161: P A39 80deg - bridgegirder : Torsional moment [MNm]

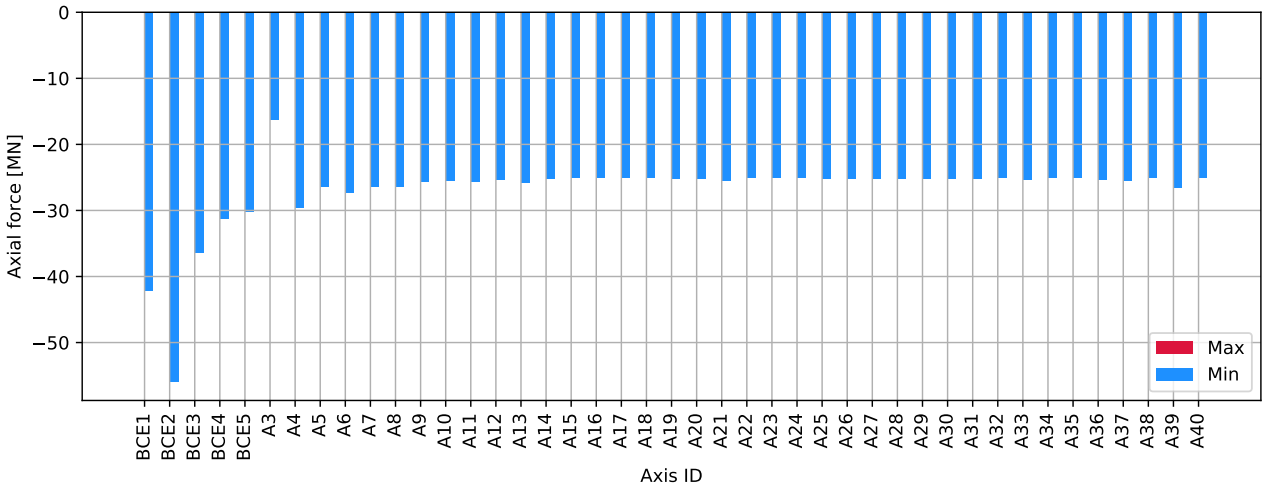

Figure 3.1162: P A39 80deg - columns bottom : Axial force [MN]

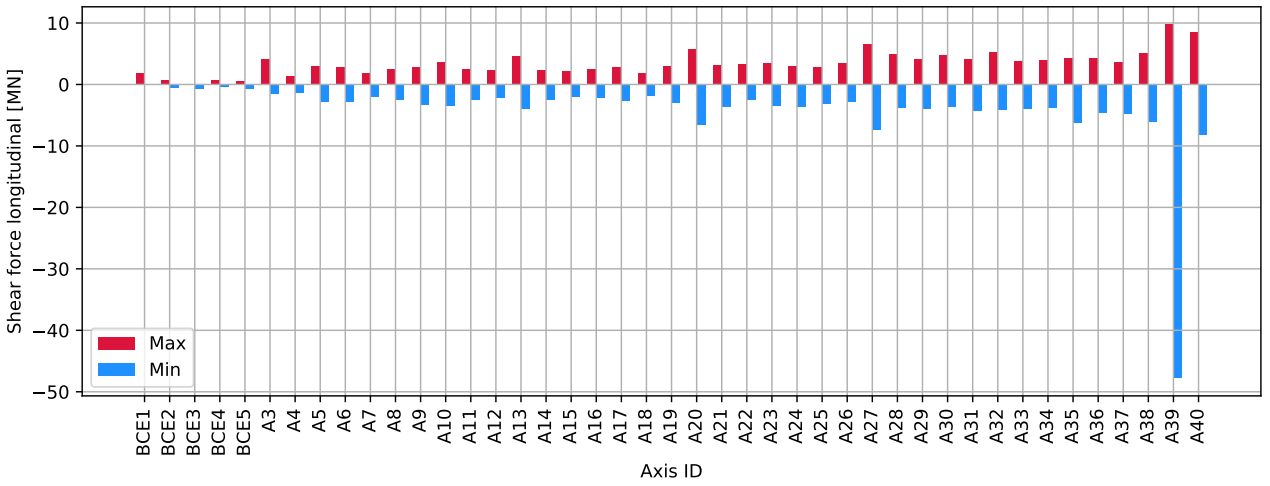

Figure 3.1163: P A39 80deg - columns bottom : Shear force longitudinal [MN]

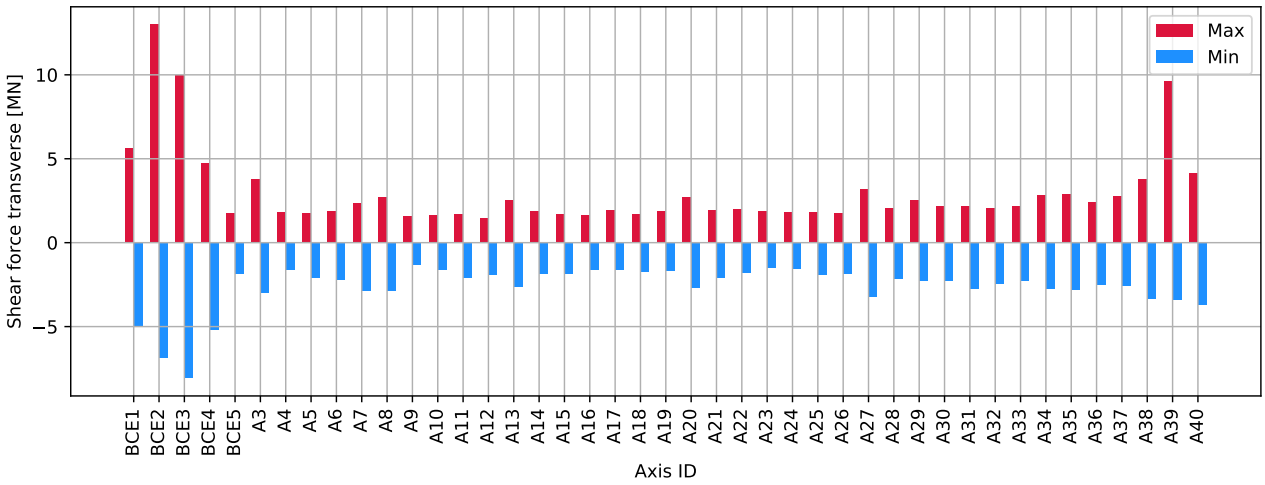

Figure 3.1164: P A39 80deg - columns bottom : Shear force transverse [MN]

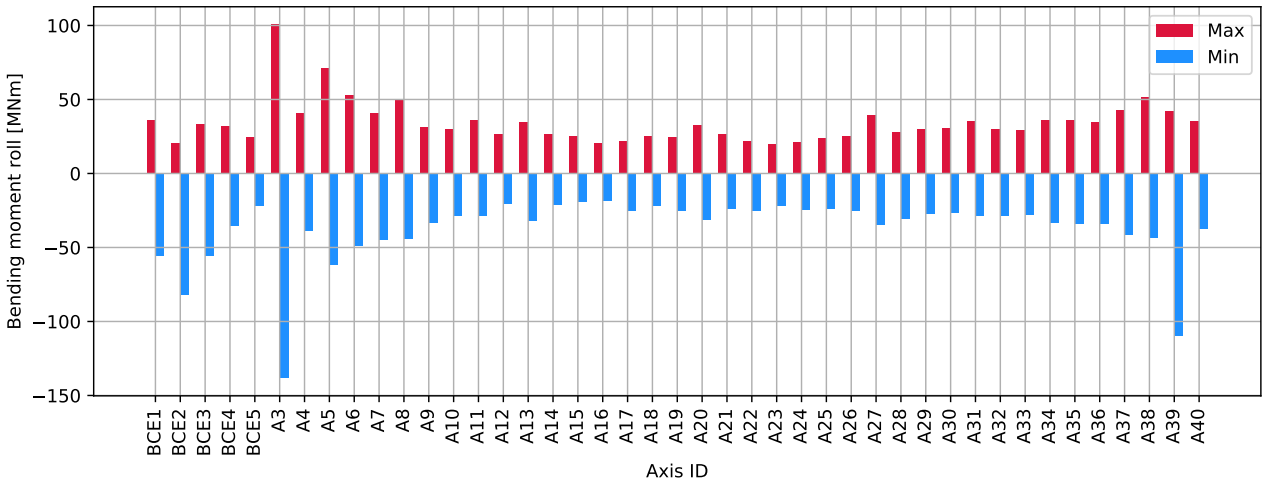

Figure 3.1165: P A39 80deg - columns bottom : Bending moment roll [MNm]

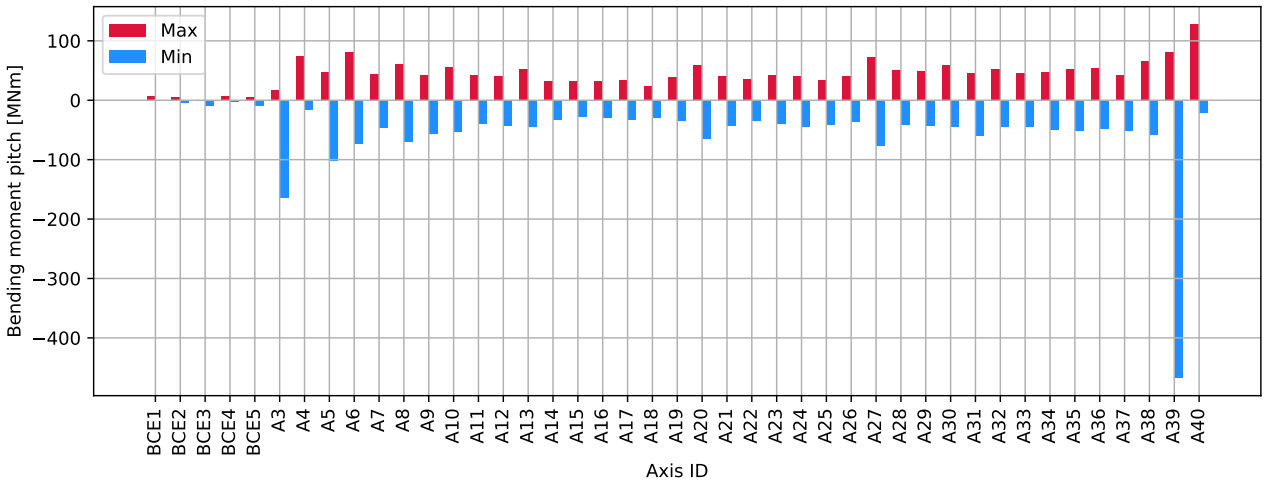

Figure 3.1166: P A39 80deg - columns bottom : Bending moment pitch [MNm]

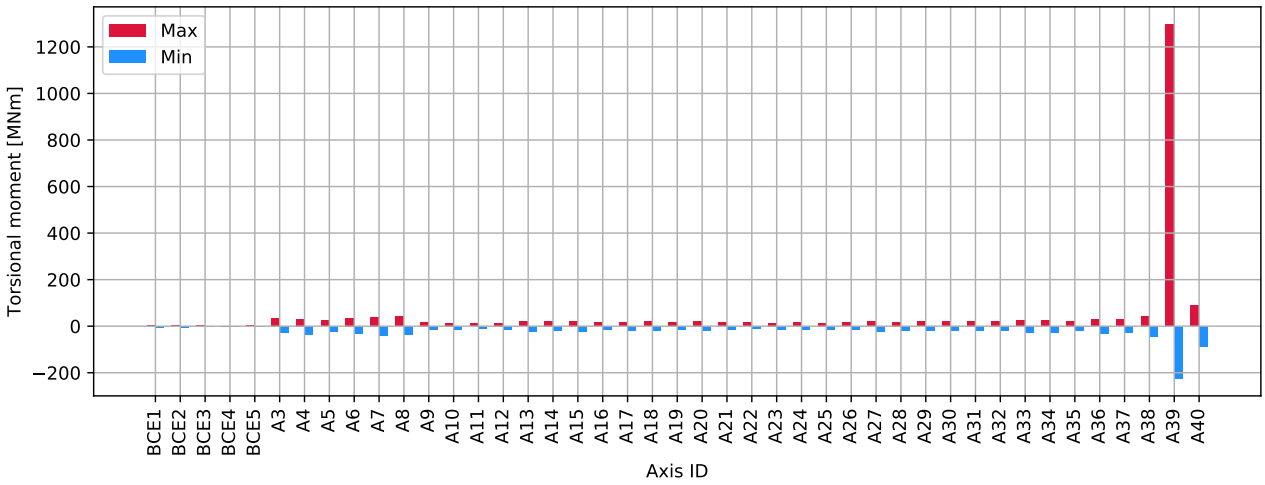

Figure 3.1167: P A39 80deg - columns bottom : Torsional moment [MNm]

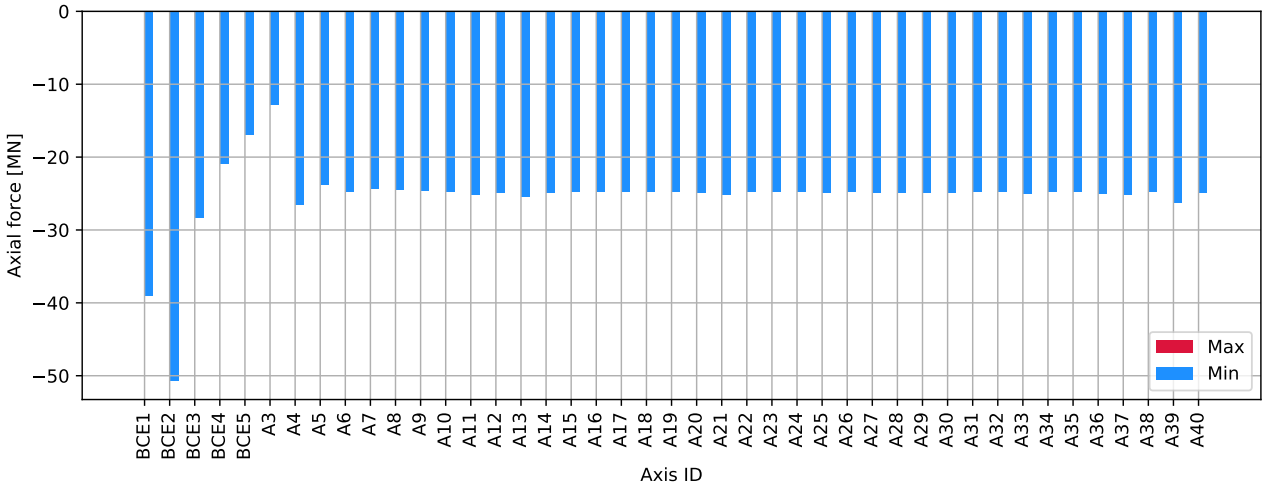

Figure 3.1168: P A39 80deg - columns top : Axial force [MN]

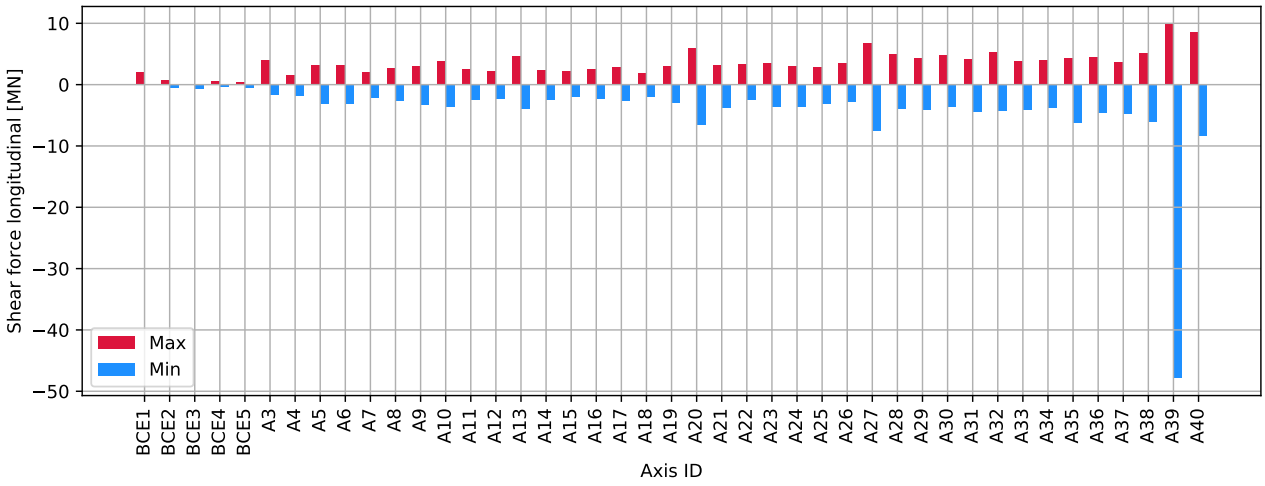

Figure 3.1169: P A39 80deg - columns top : Shear force longitudinal [MN]

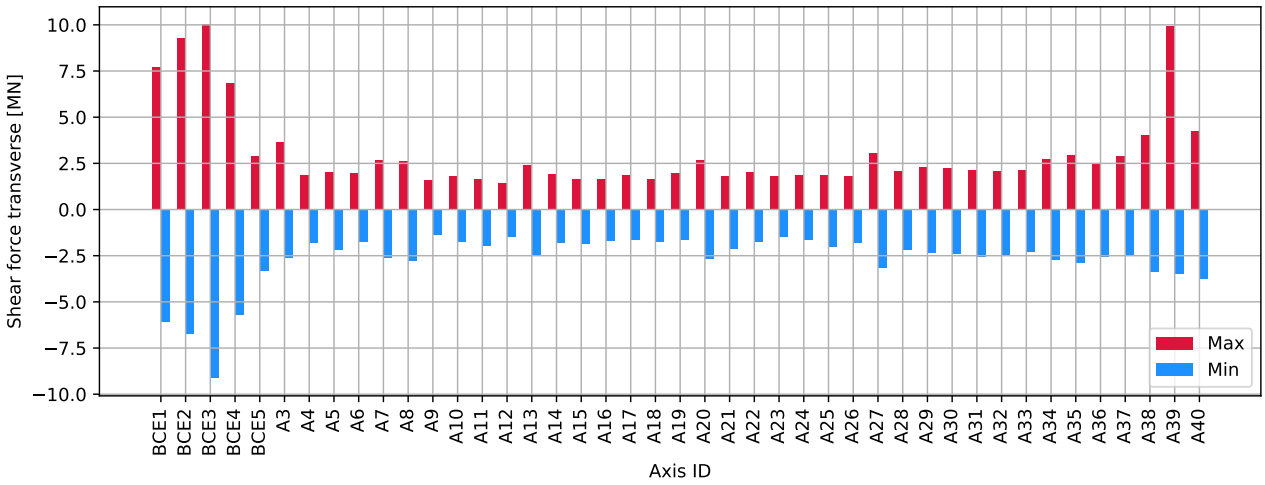

Figure 3.1170: P A39 80deg - columns top : Shear force transverse [MN]

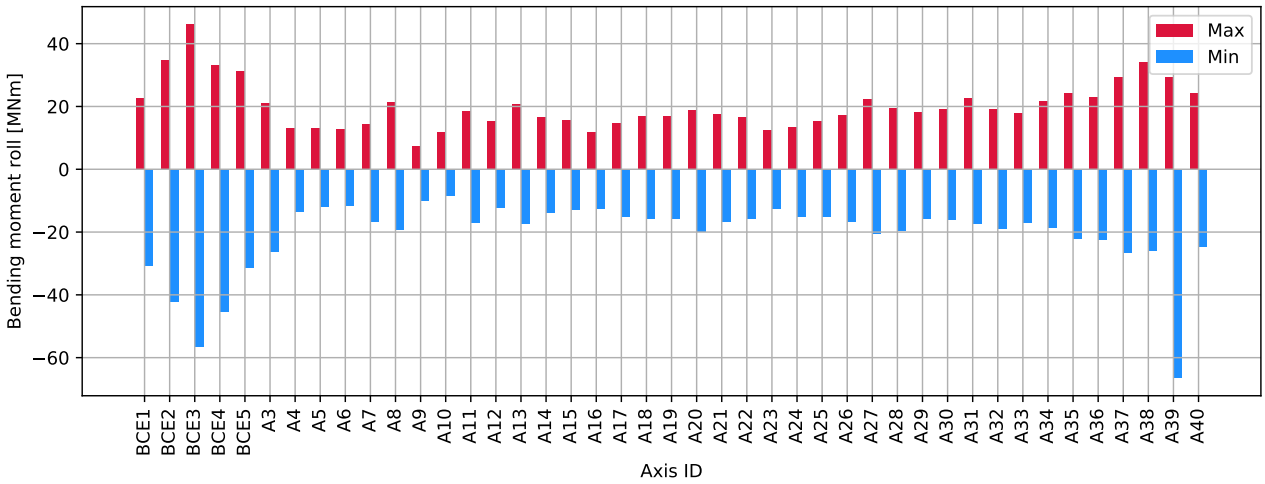

Figure 3.1171: P A39 80deg - columns top : Bending moment roll [MNm]

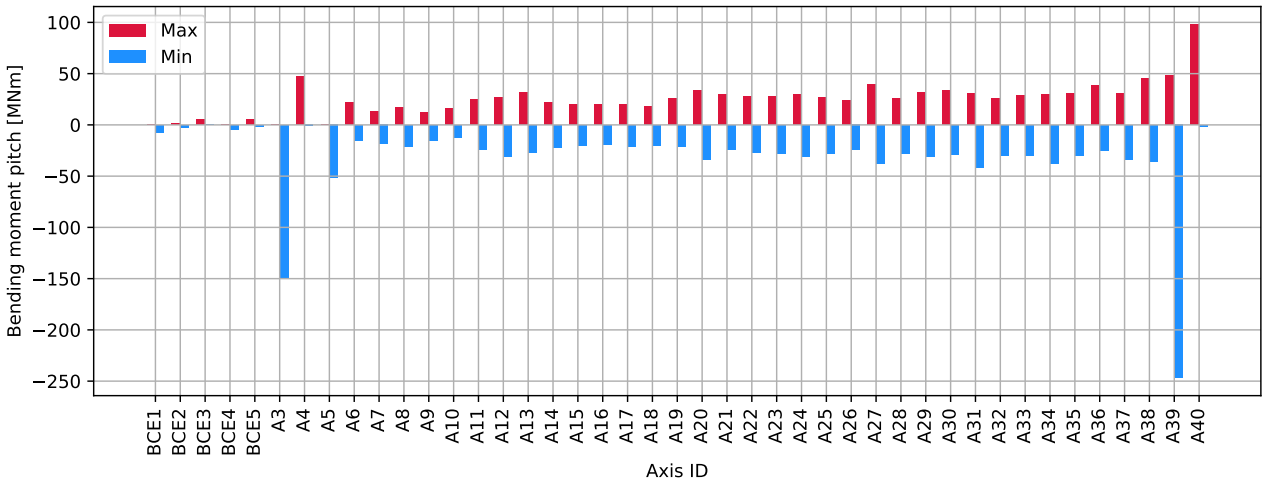

Figure 3.1172: P A39 80deg - columns top : Bending moment pitch [MNm]

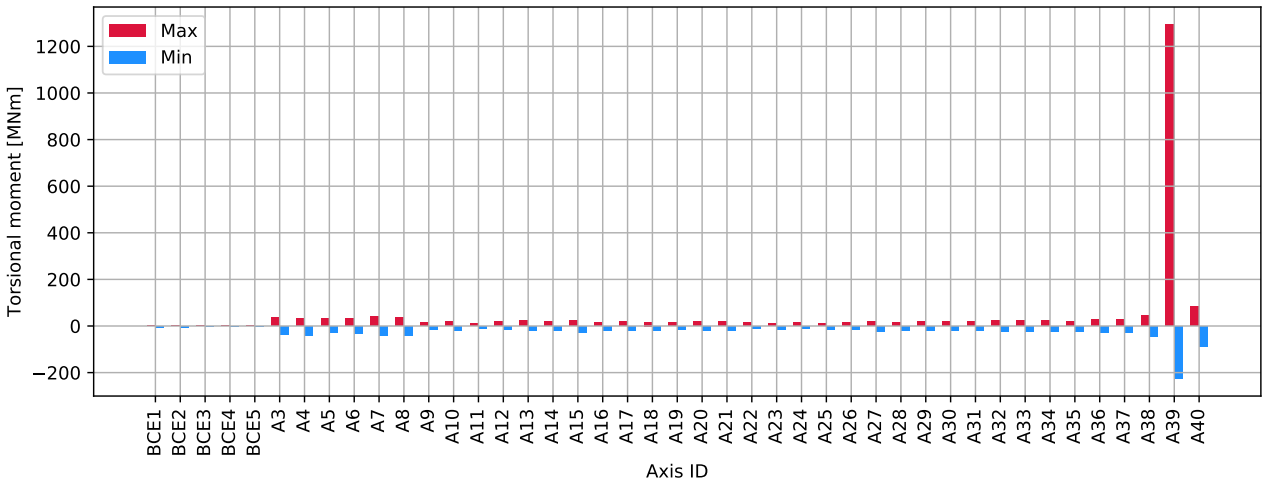

Figure 3.1173: P A39 80deg - columns top : Torsional moment [MNm]

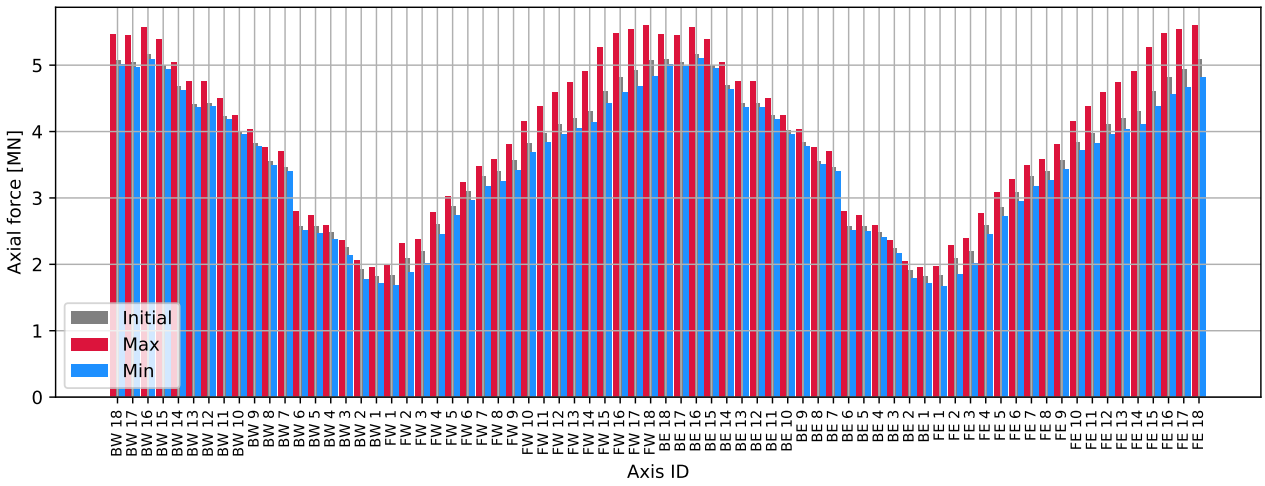

Figure 3.1174: P A39 80deg - cables : Axial force [MN]

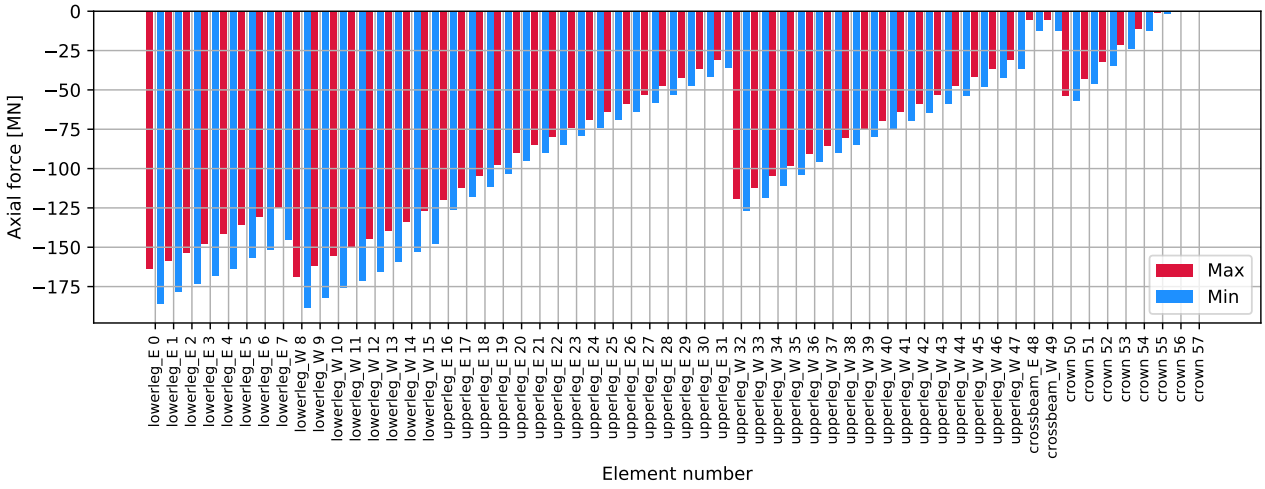

Figure 3.1175: P A39 80deg - tower: Axial force [MN]

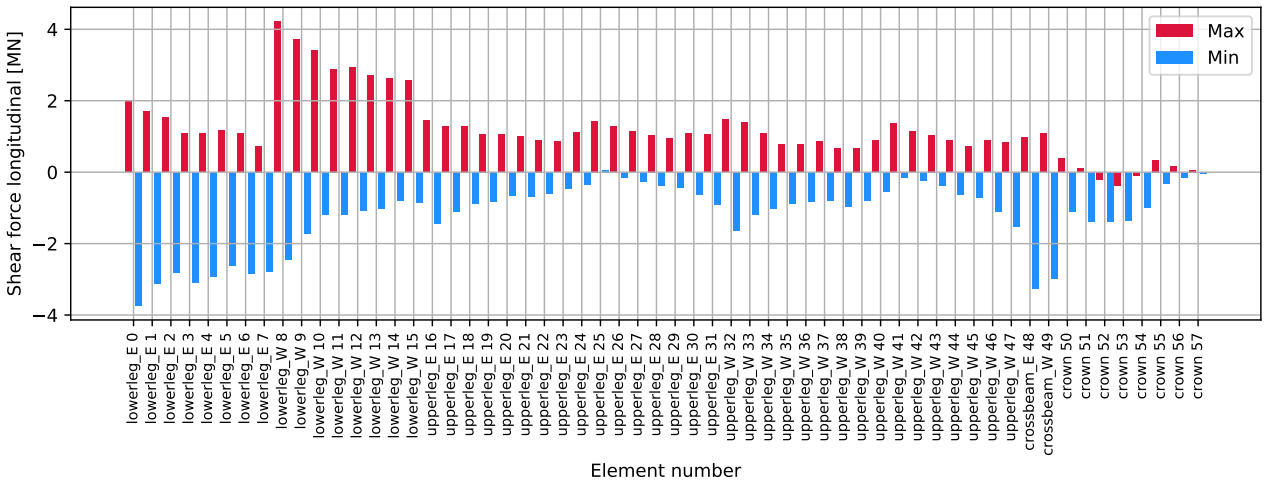

Figure 3.1176: P A39 80deg - tower: Shear force longitudinal [MN]

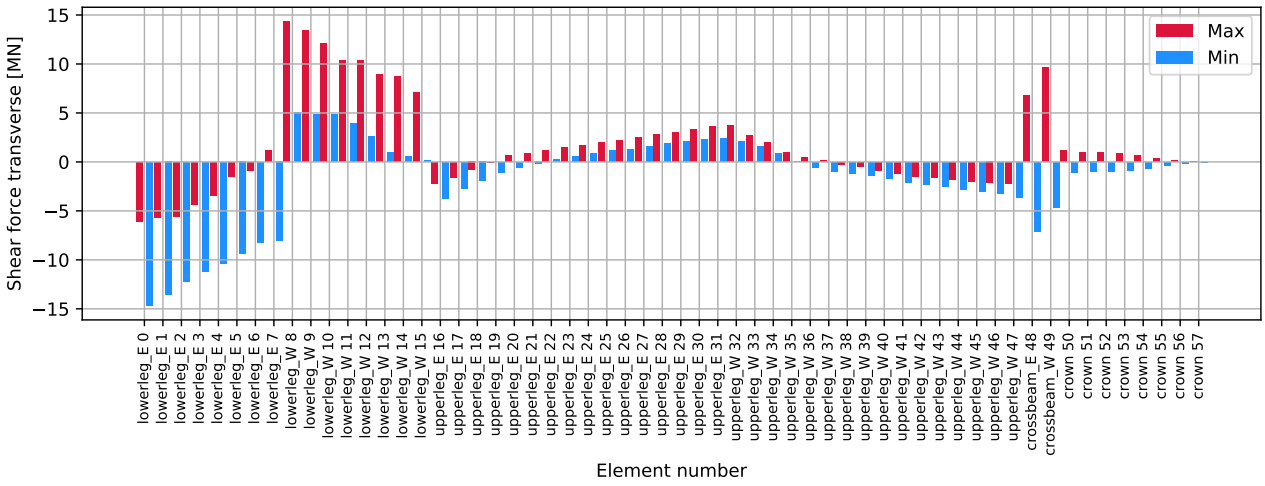

Figure 3.1177: P A39 80deg - tower: Shear force transverse [MN]

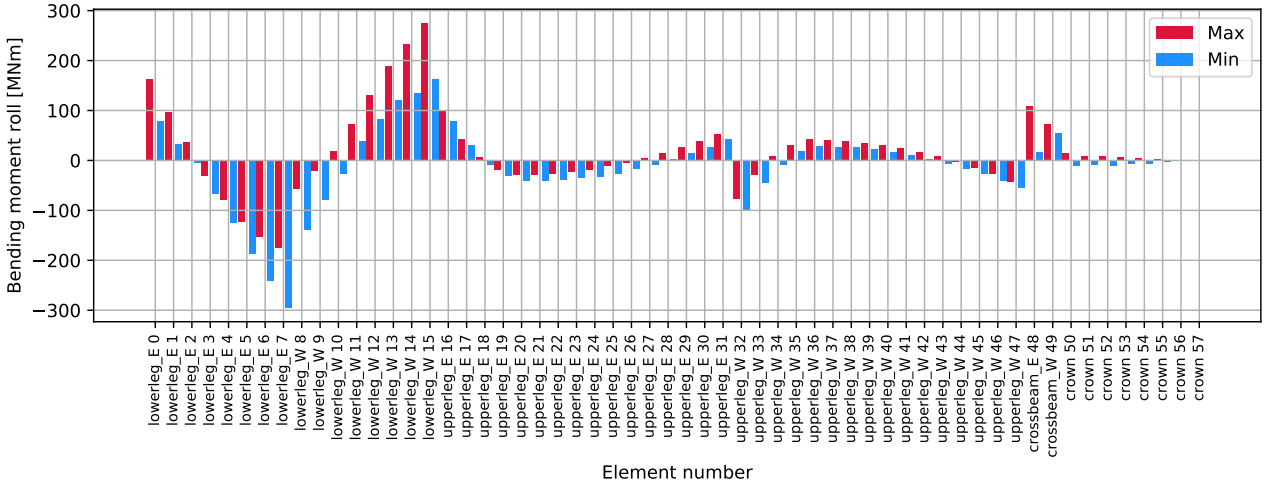

Figure 3.1178: P A39 80deg - tower: Bending moment roll [MNm]

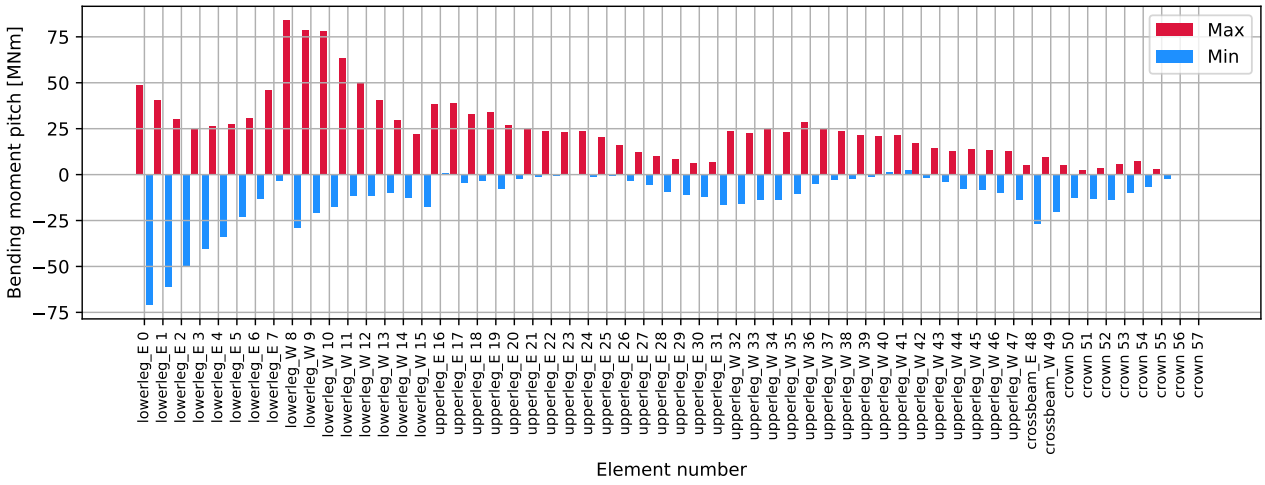

Figure 3.1179: P A39 80deg - tower: Bending moment pitch [MNm]

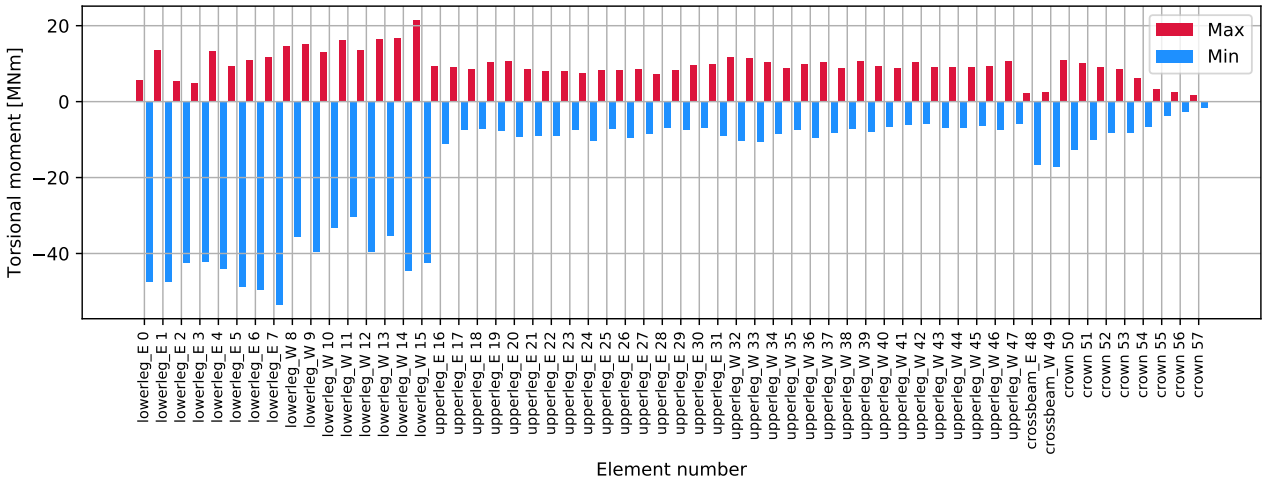

Figure 3.1180: P A39 80deg - tower: Torsional moment [MNm]

3.26.3 Time series

Note : Time series are filtered using a Saviotzky-Golay filter for increased readability of the time history plots. Hence, maximum values that occur due to a rapid vibration are not shown in the plots. For maximum values, refer to the tabulated data.
All elements are numbered from South to North, bottom to top

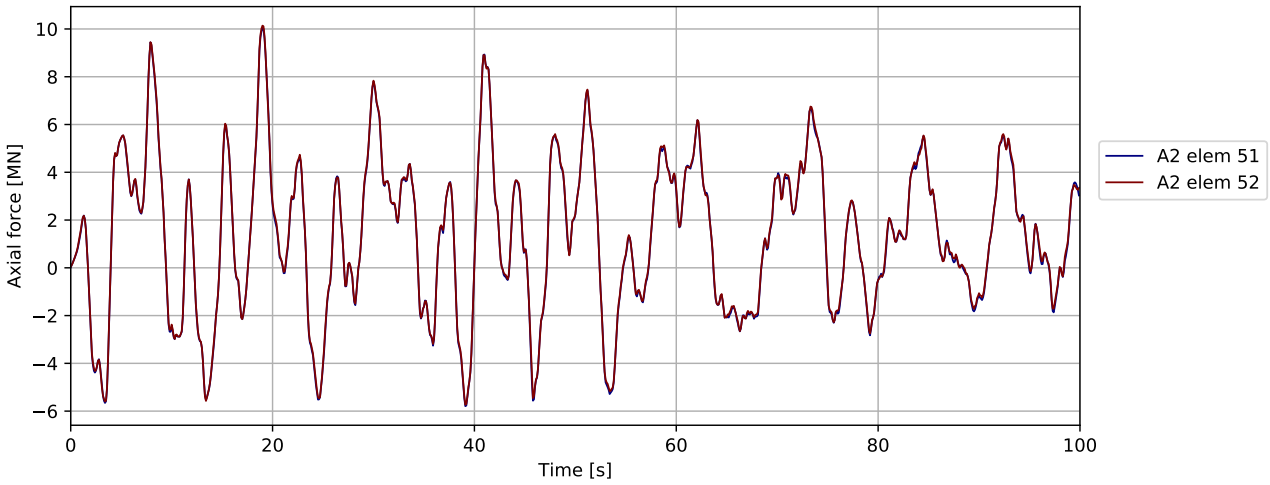

Figure 3.1181: P A39 80deg - bridgegirder @ pylon: Axial force [MN]

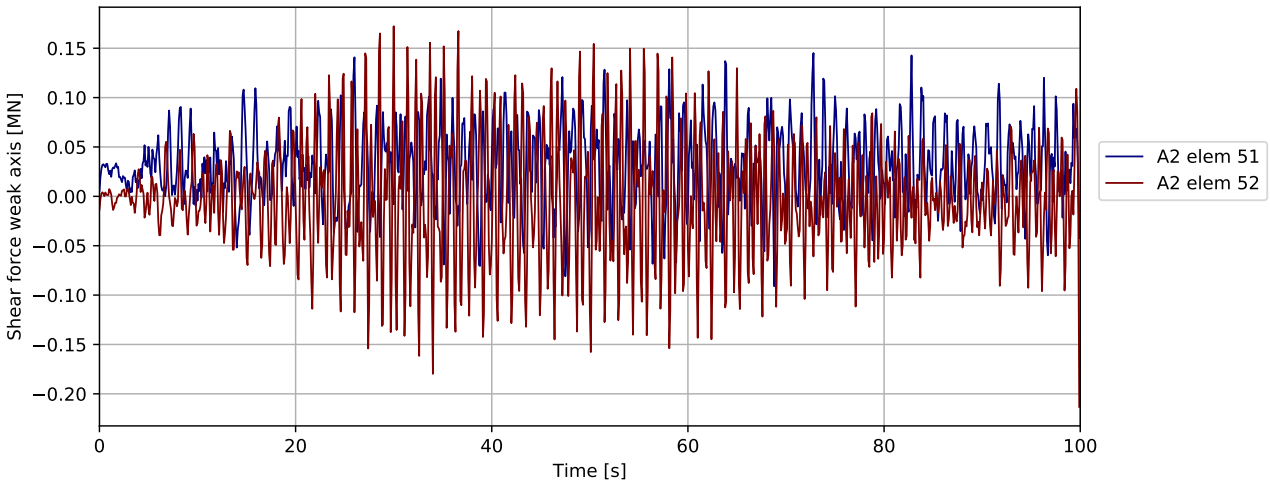

Figure 3.1182: P A39 80deg - bridgegirder @ pylon: Shear force weak axis [MN]

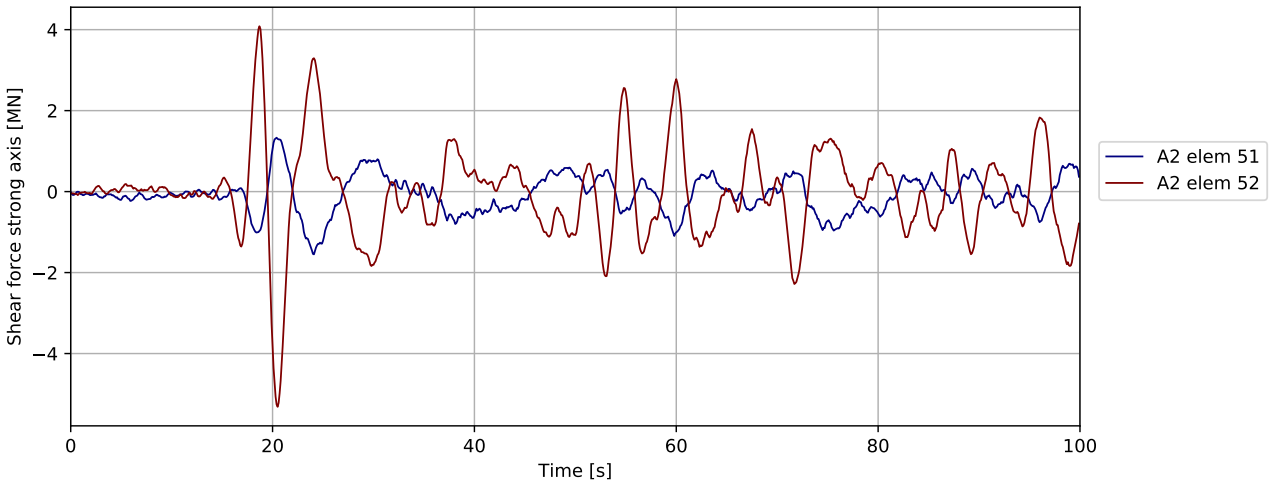

Figure 3.1183: P A39 80deg - bridgegirder @ pylon: Shear force strong axis [MN]

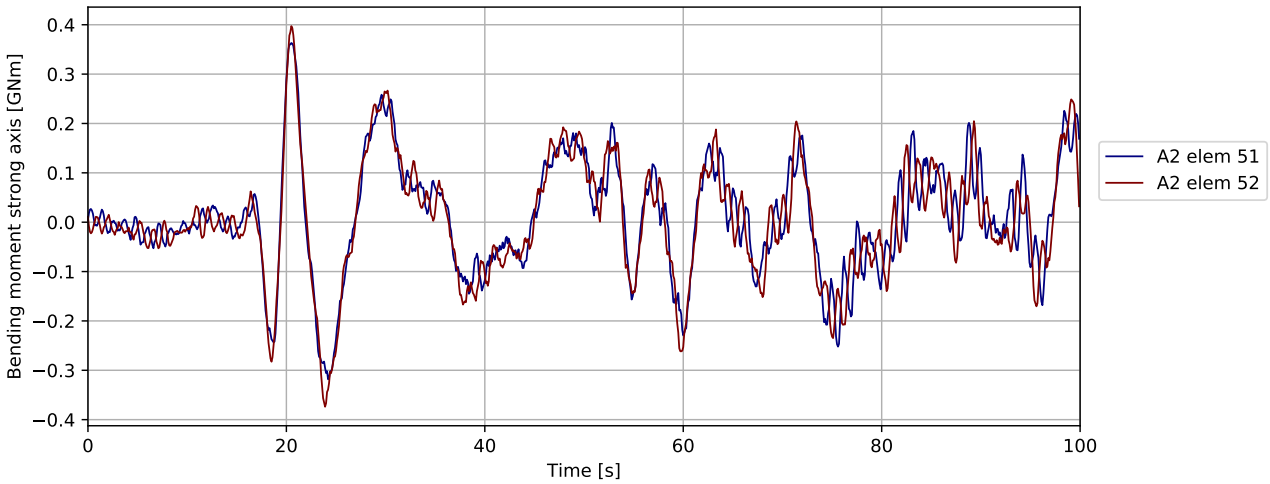

Figure 3.1184: P A39 80deg - bridgegirder @ pylon: Bending moment strong axis [GNm]

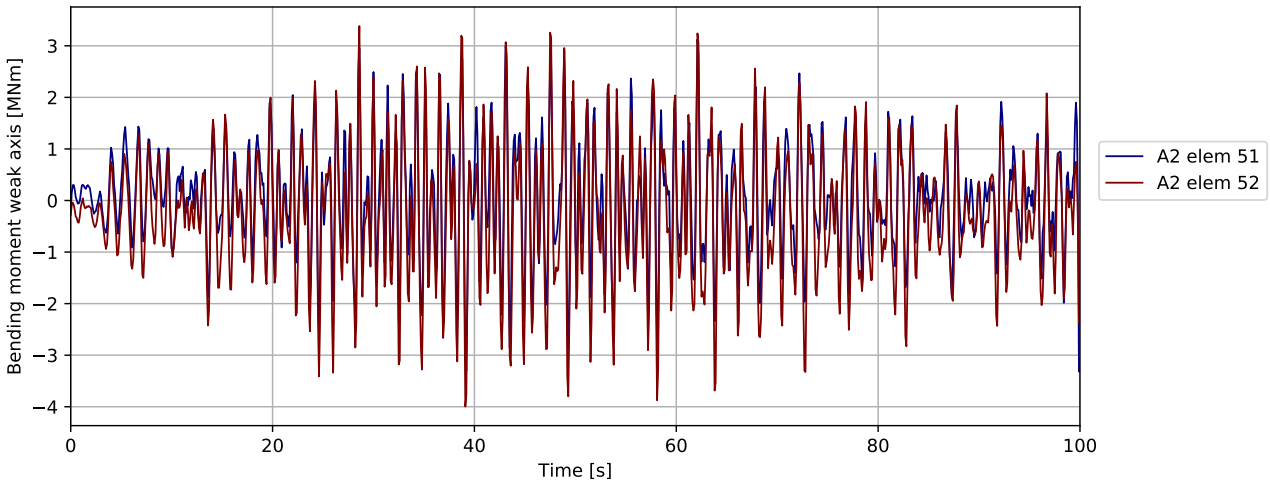

Figure 3.1185: P A39 80deg - bridgegirder @ pylon: Bending moment weak axis [MNm]

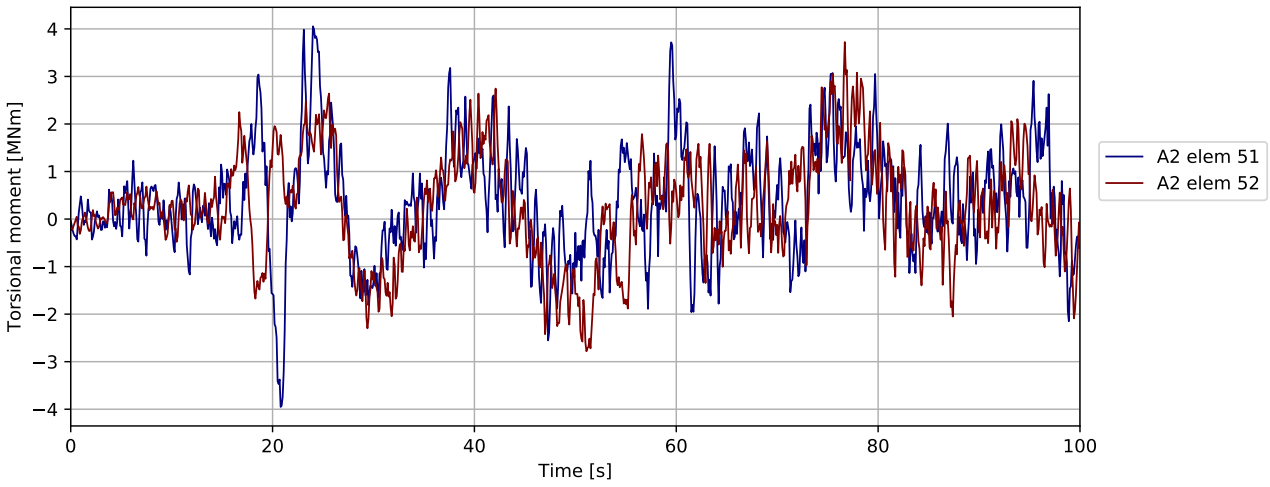

Figure 3.1186: P A39 80deg - bridgegirder @ pylon: Torsional moment [MNm]

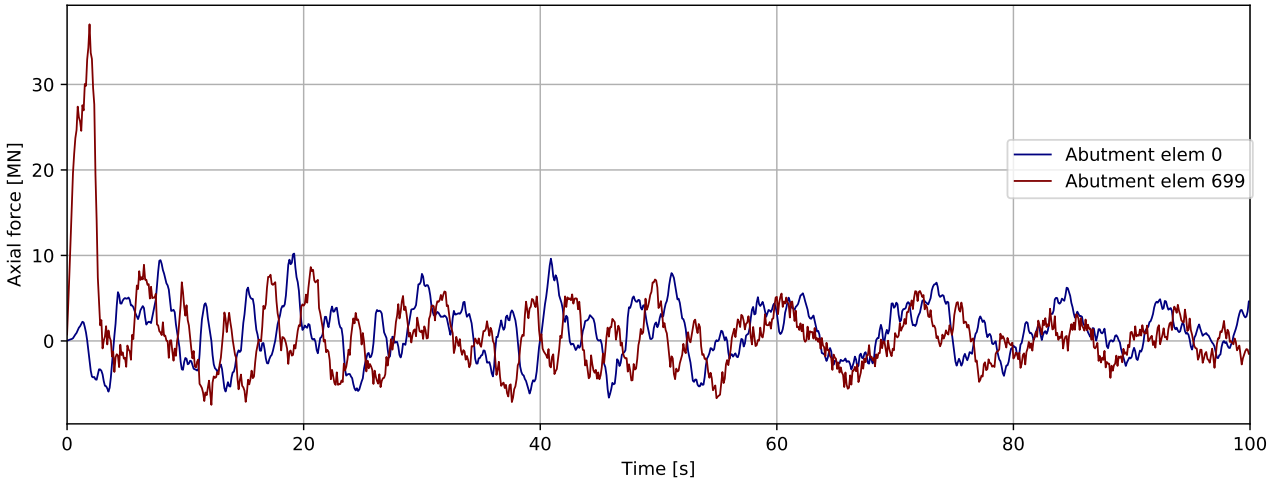

Figure 3.1187: P A39 80deg - bridgegirder @abutments: Axial force [MN]

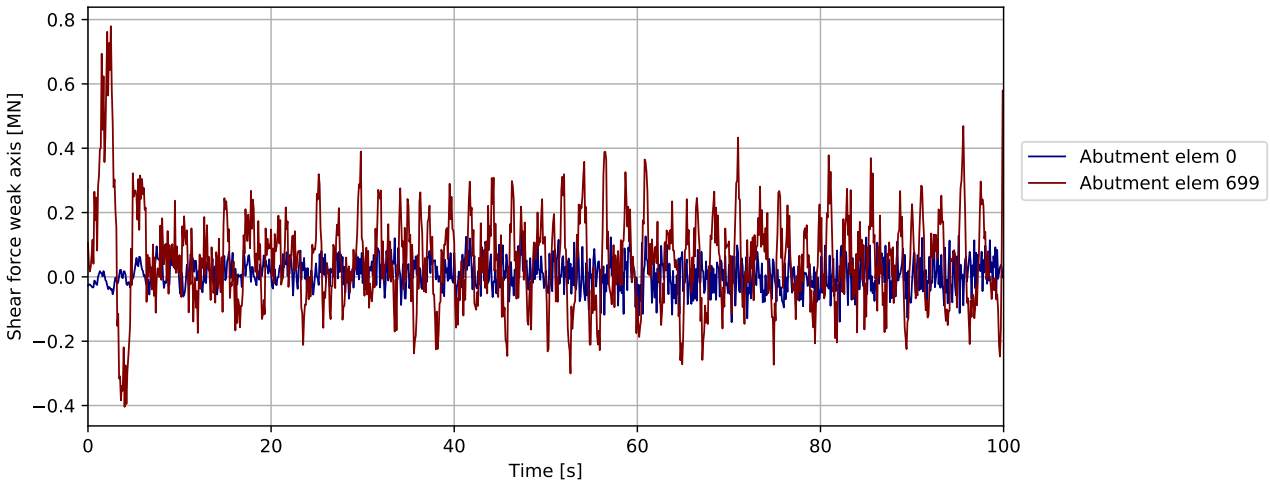

Figure 3.1188: P A39 80deg - bridgegirder @abutments: Shear force weak axis [MN]

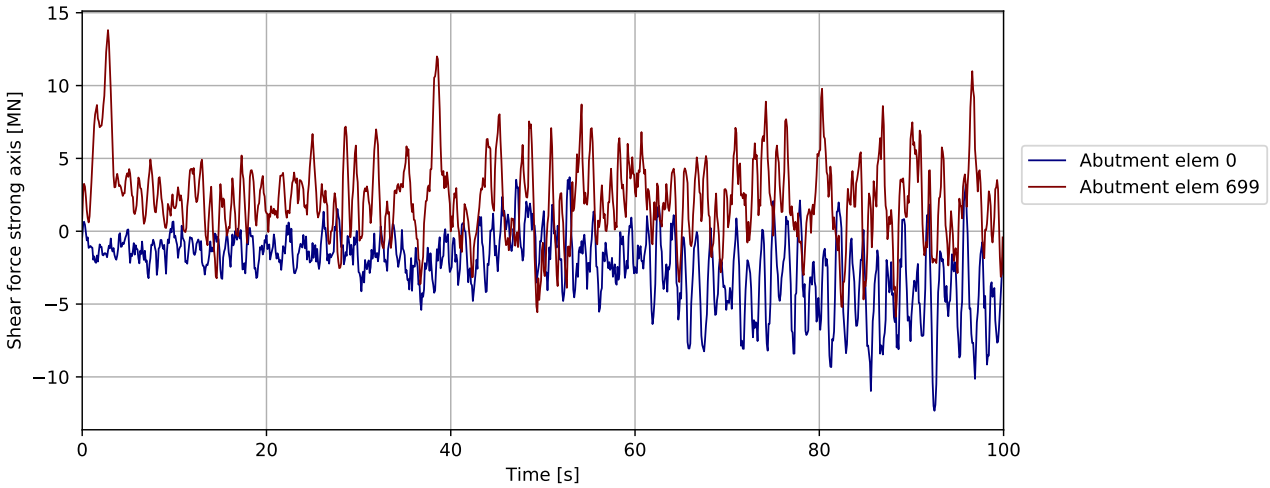

Figure 3.1189: P A39 80deg - bridgegirder @abutments: Shear force strong axis [MN]

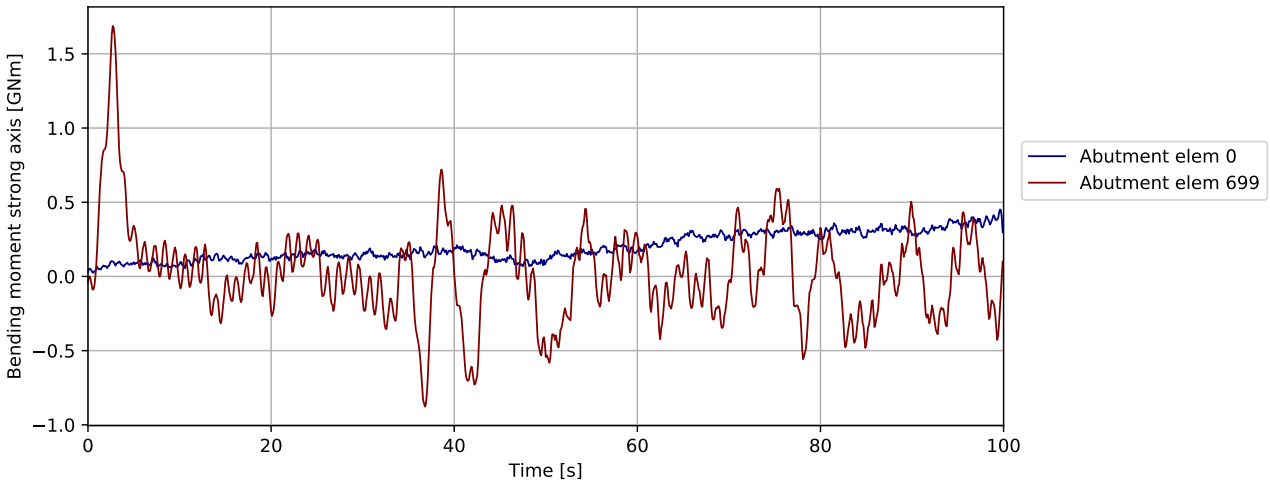

Figure 3.1190: P A39 80deg - bridgegirder @abutments: Bending moment strong axis [GNm]

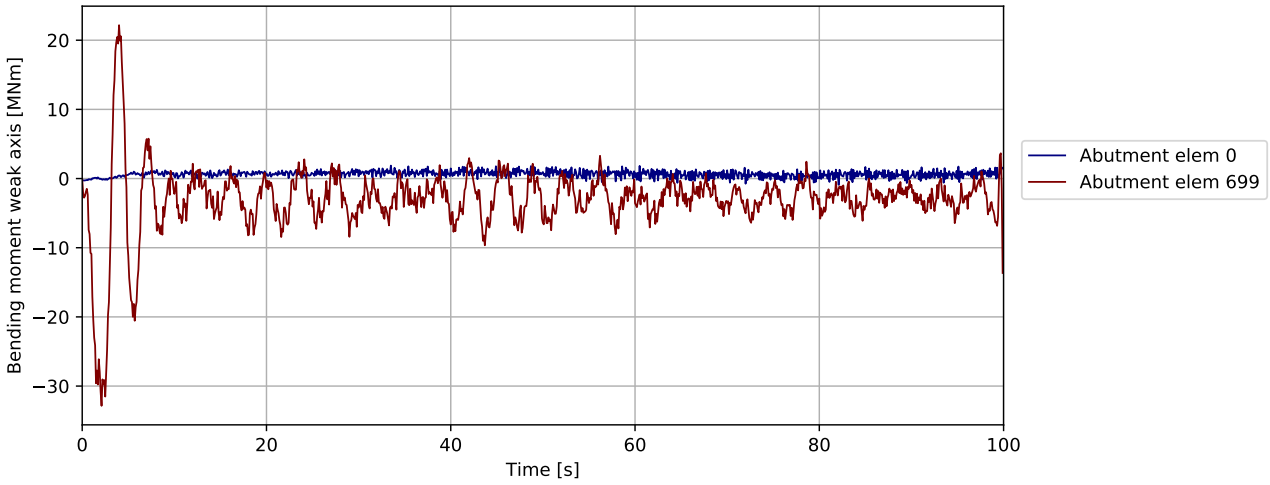

Figure 3.1191: P A39 80deg - bridgegirder @abutments: Bending moment weak axis [MNm]

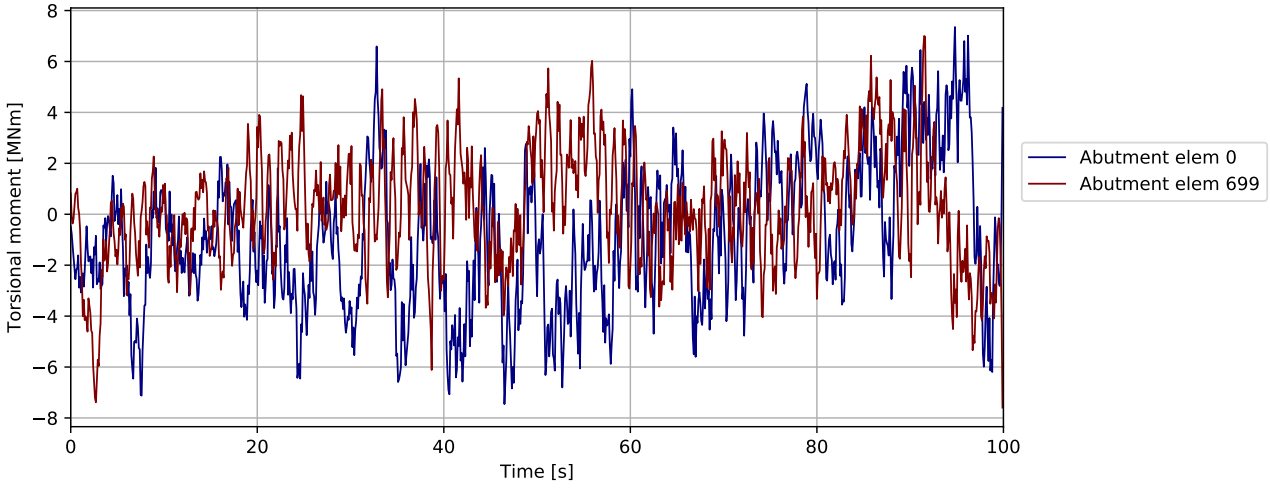

Figure 3.1192: P A39 80deg - bridgegirder @abutments: Torsional moment [MNm]

Note : Compressive spring force is negative

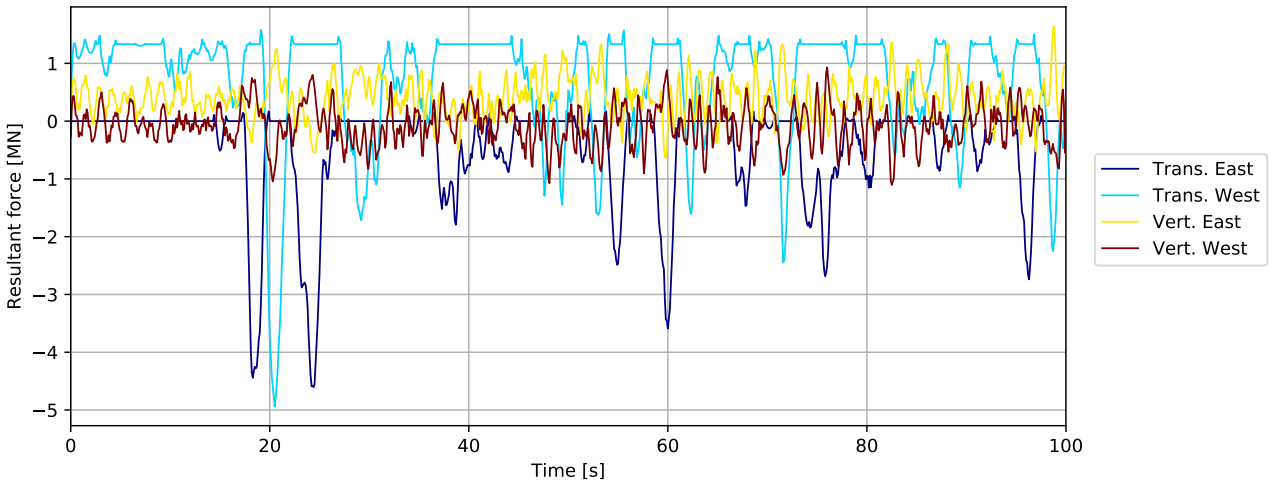

Figure 3.1193: P A39 80deg - bridgegirder supports in tower: Resultant force [MN]

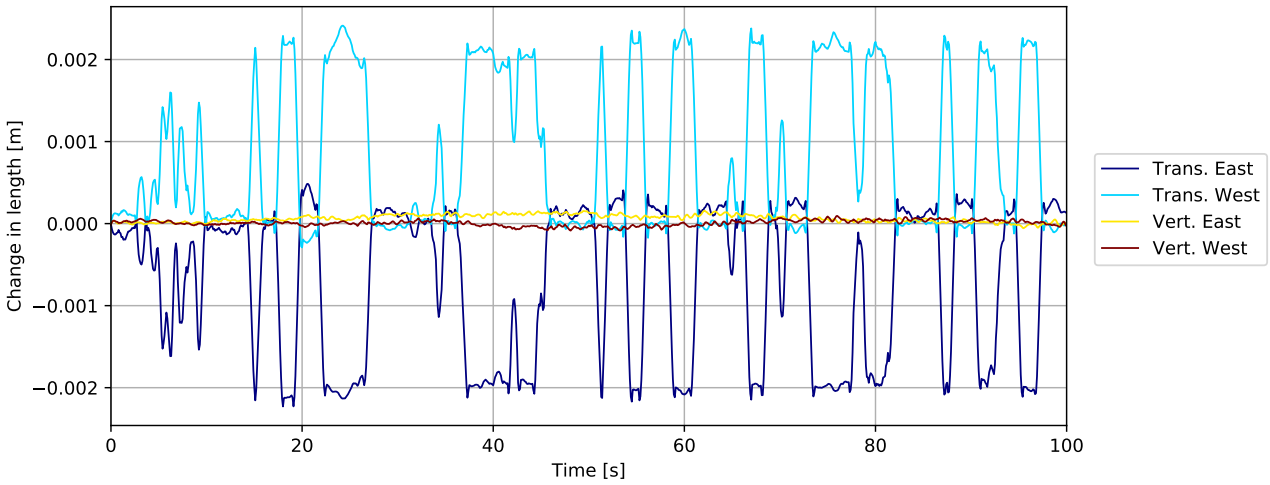

Figure 3.1194: P A39 80deg - bridgegirder supports in tower: Change in length [m]

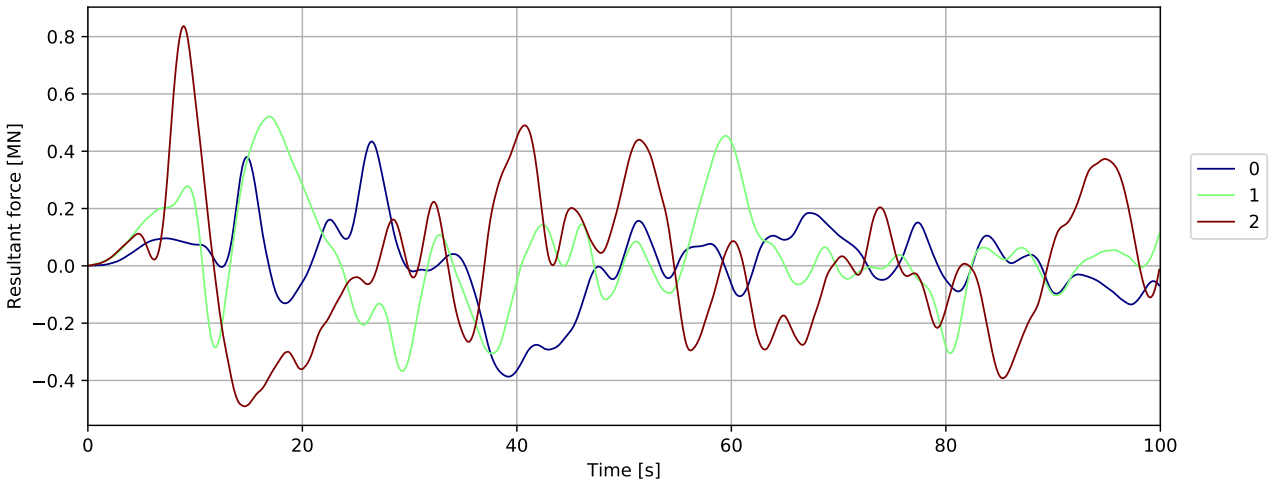

Figure 3.1195: Mooring force

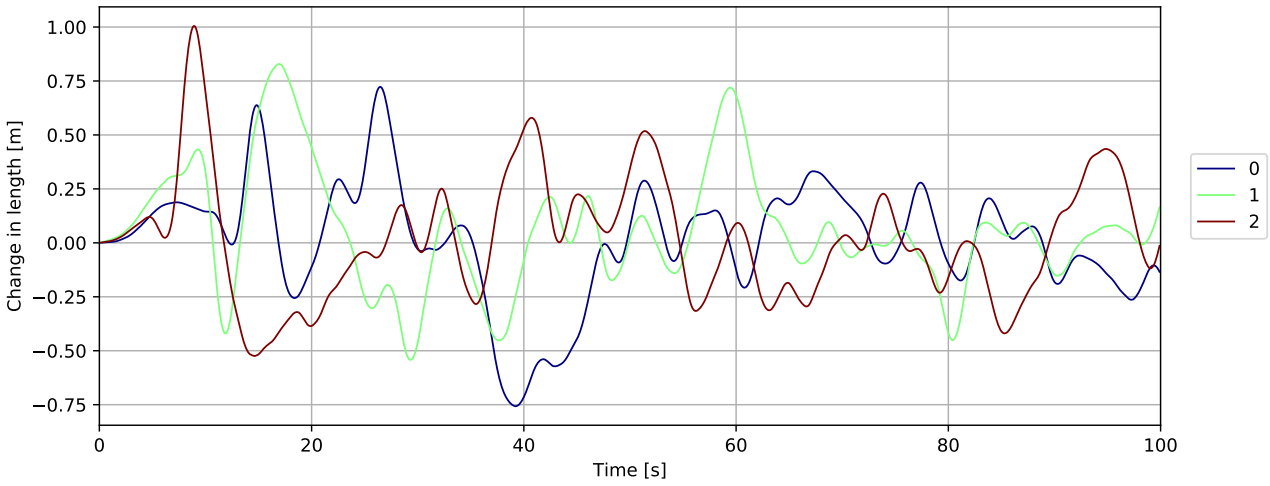

Figure 3.1196: Mooring displacement

3.27 PontoonA40 80deg

3.27.1 Overall response

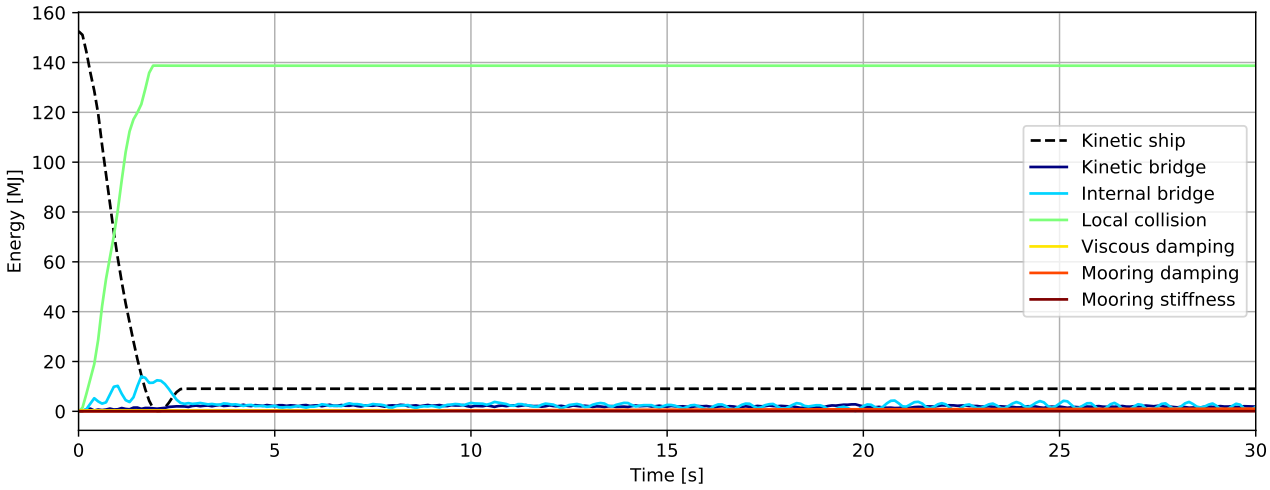

Figure 3.1197: Energy [MJ] - initial phase

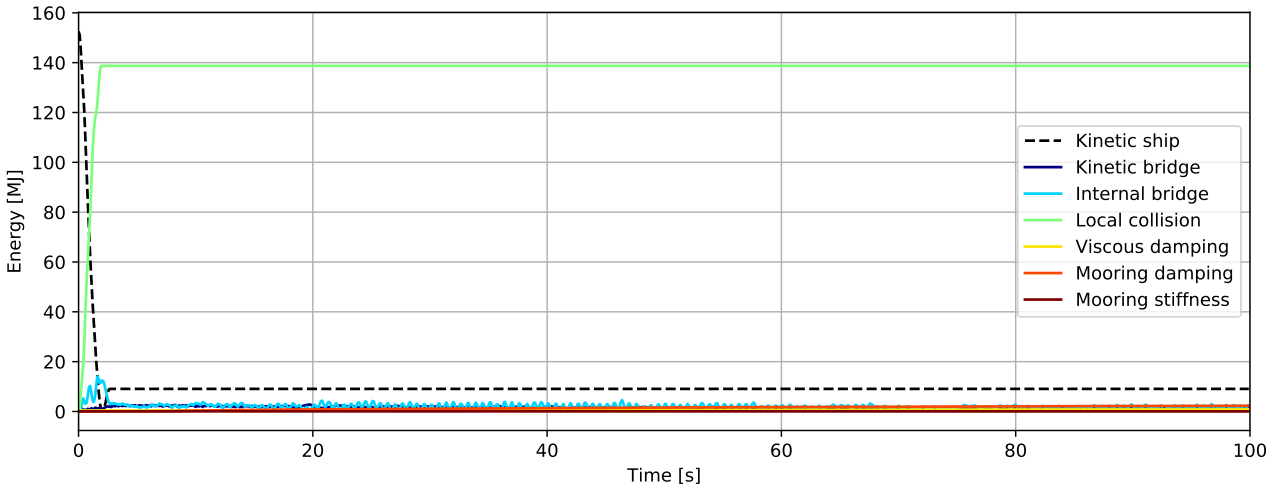

Figure 3.1198: Energy [MJ]

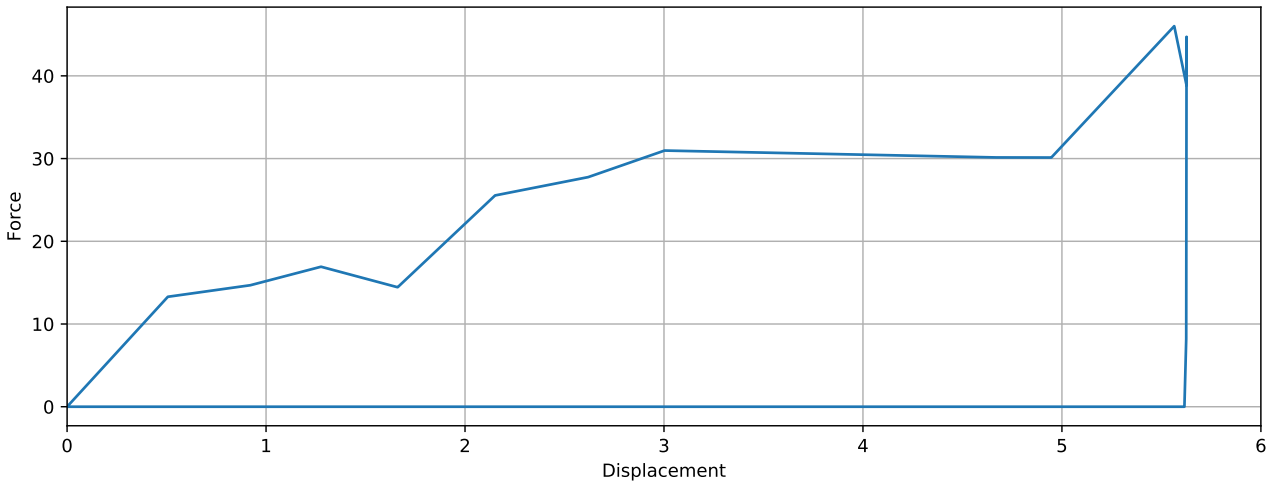

Figure 3.1199: Simulated local collision force-displacement

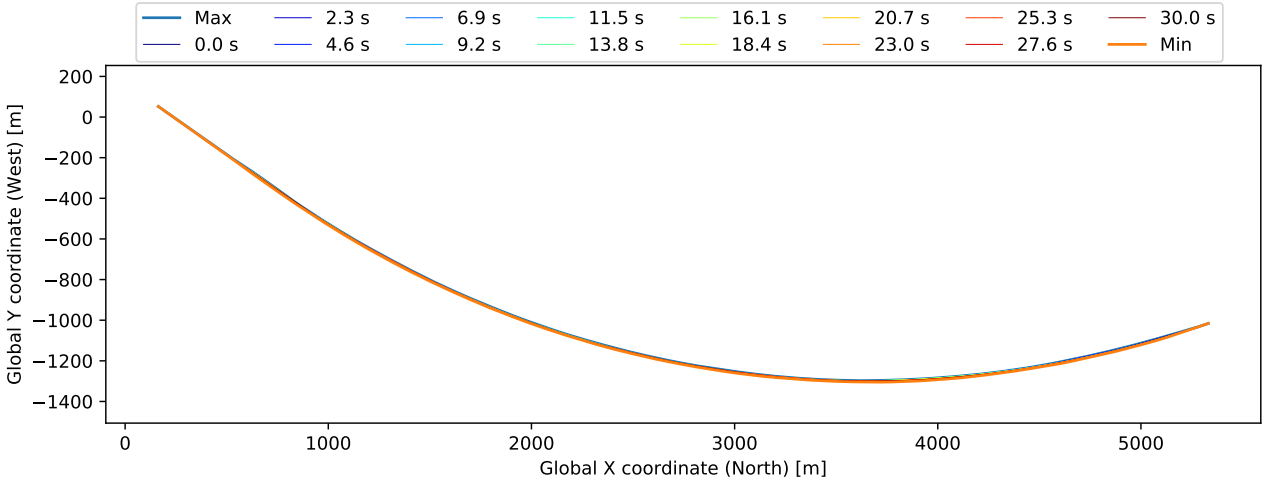

Figure 3.1200: Bridgegirder deflection (10x displacment scaling)

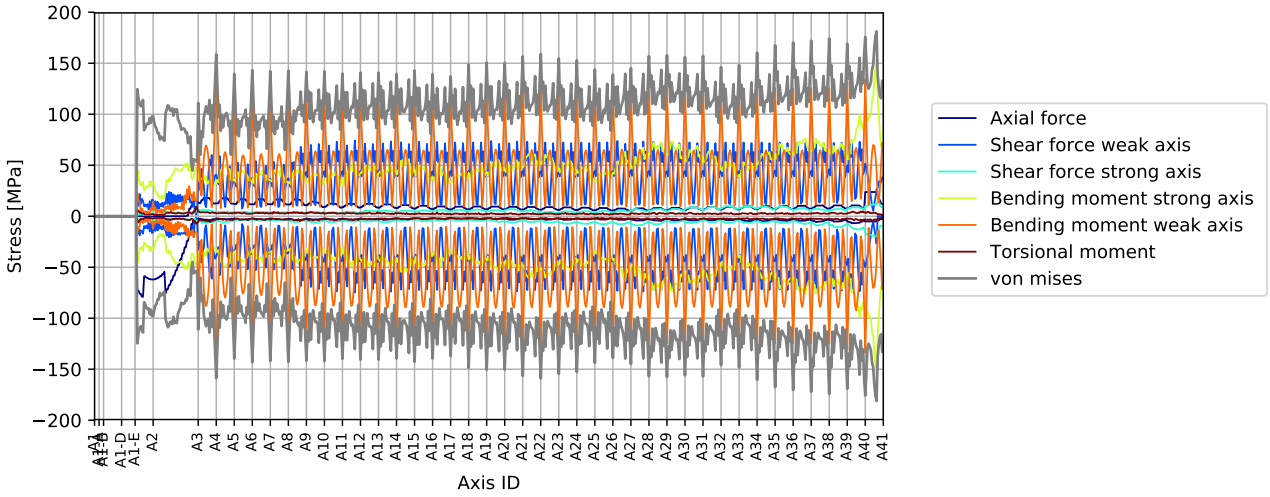

Figure 3.1201: Stress envelope from all force components

3.27.2 Envelope plots

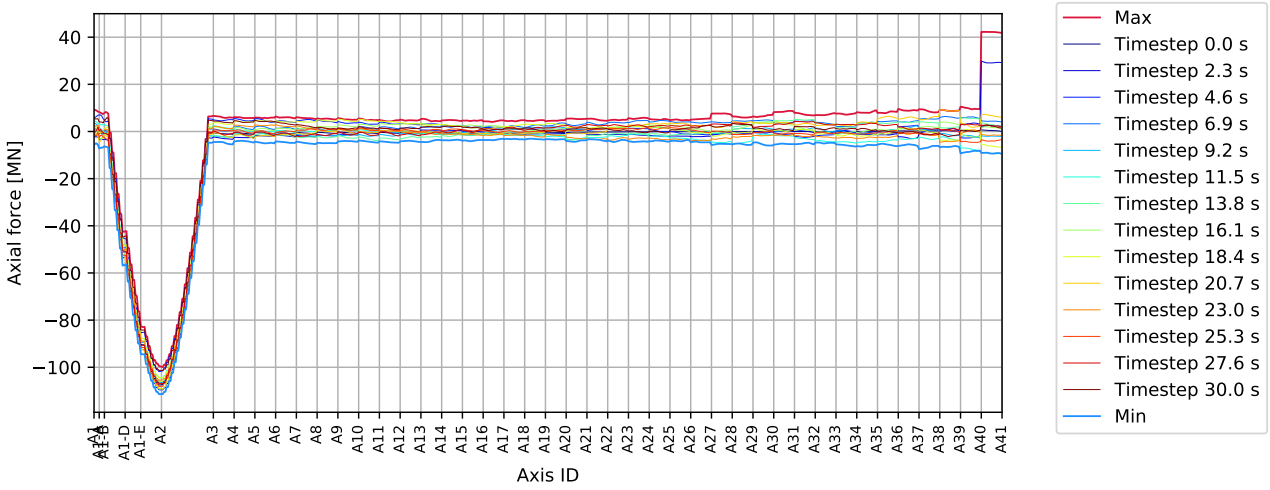

Figure 3.1202: P A40 80deg - bridgegirder : Axial force [MN]

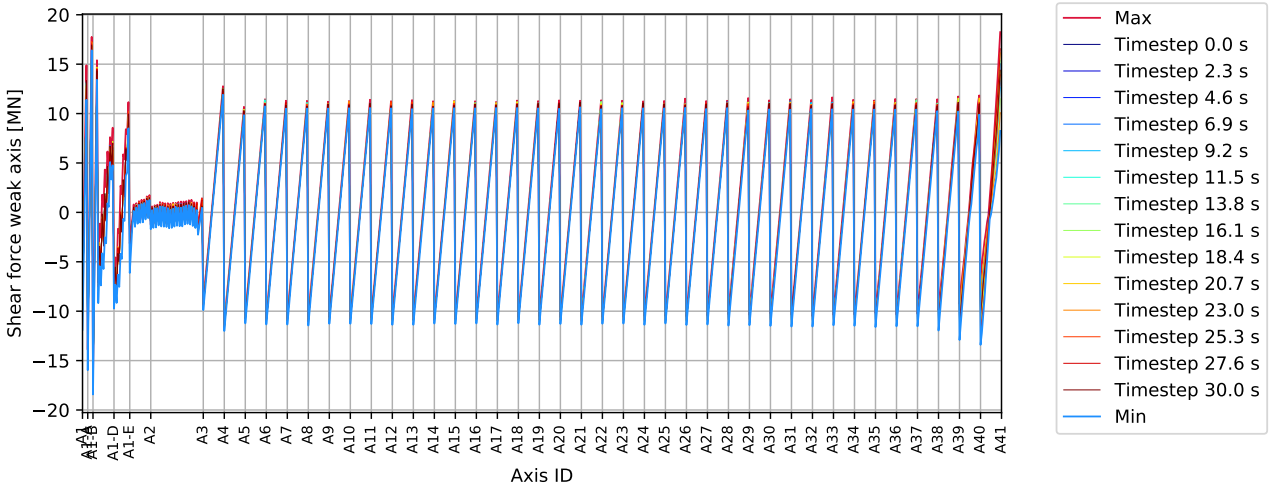

Figure 3.1203: P A40 80deg - bridgegirder : Shear force weak axis [MN]

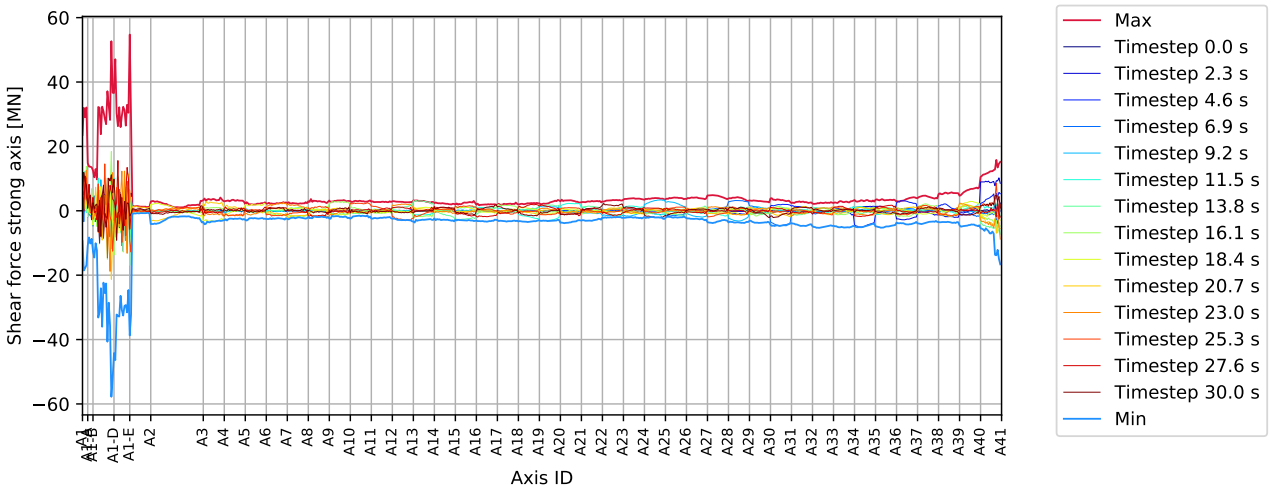

Figure 3.1204: P A40 80deg - bridgegirder : Shear force strong axis [MN]

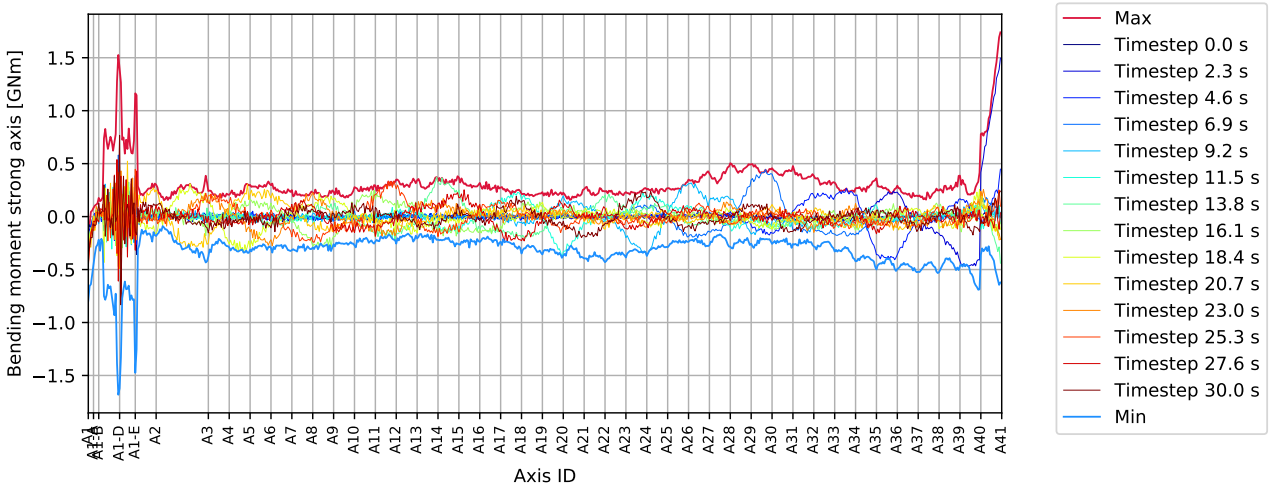

Figure 3.1205: P A40 80deg - bridgegirder : Bending moment strong axis [GNm]

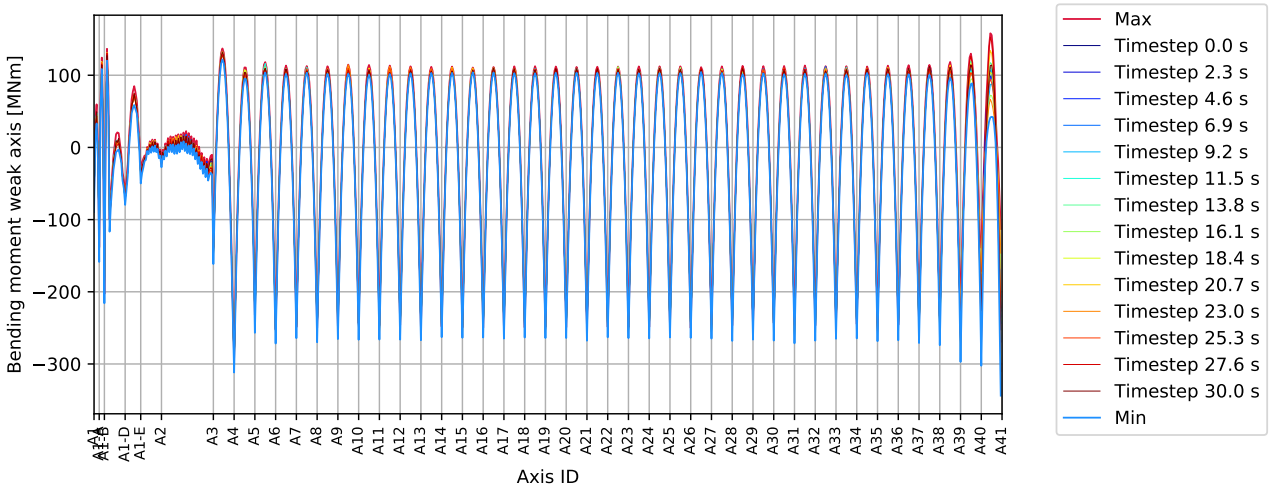

Figure 3.1206: P A40 80deg - bridgegirder : Bending moment weak axis [MNm]

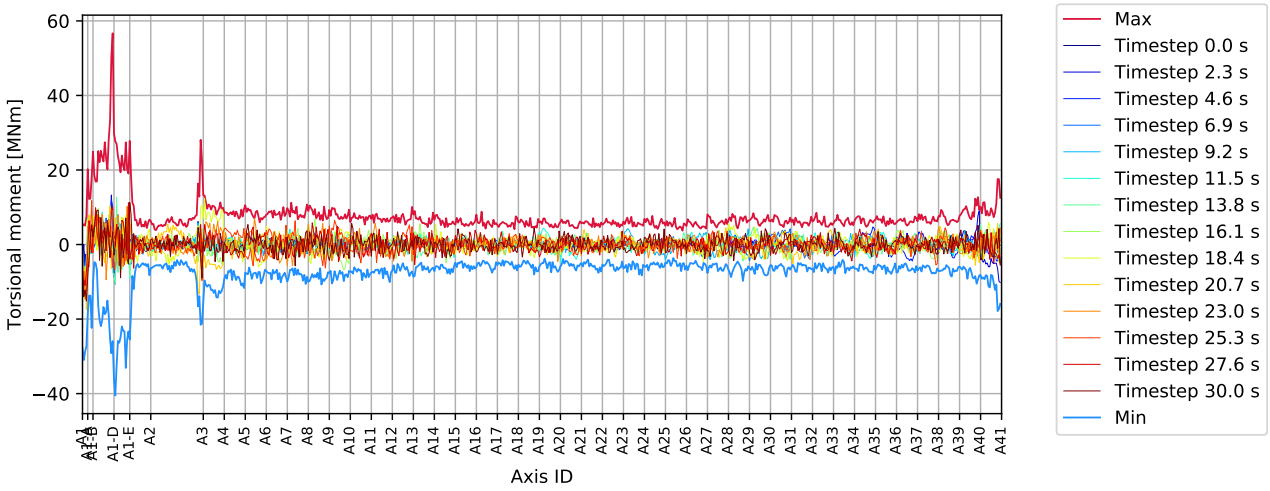

Figure 3.1207: P A40 80deg - bridgegirder : Torsional moment [MNm]

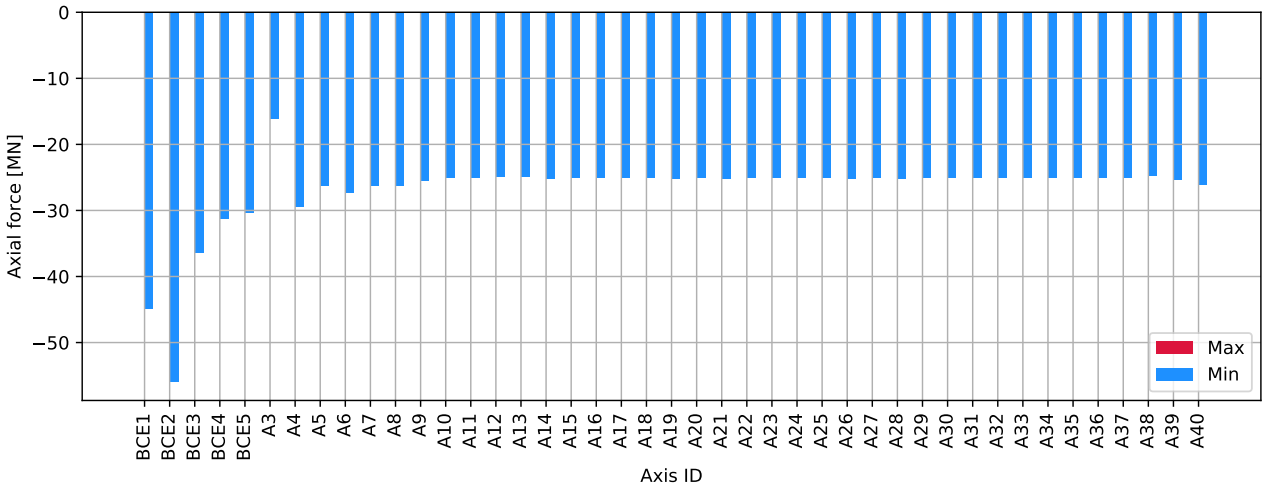

Figure 3.1208: P A40 80deg - columns bottom : Axial force [MN]

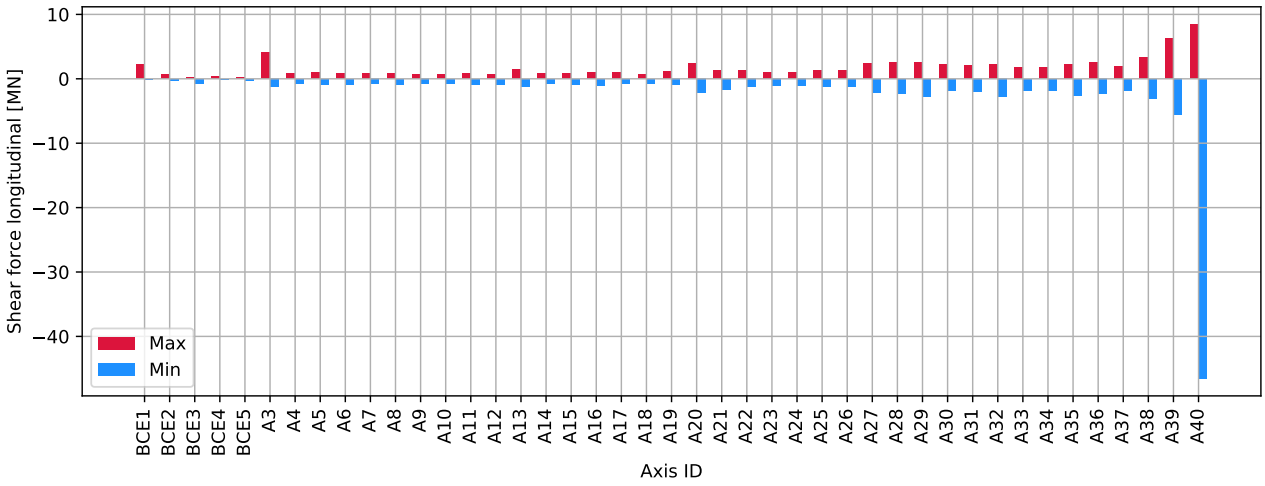

Figure 3.1209: P A40 80deg - columns bottom : Shear force longitudinal [MN]

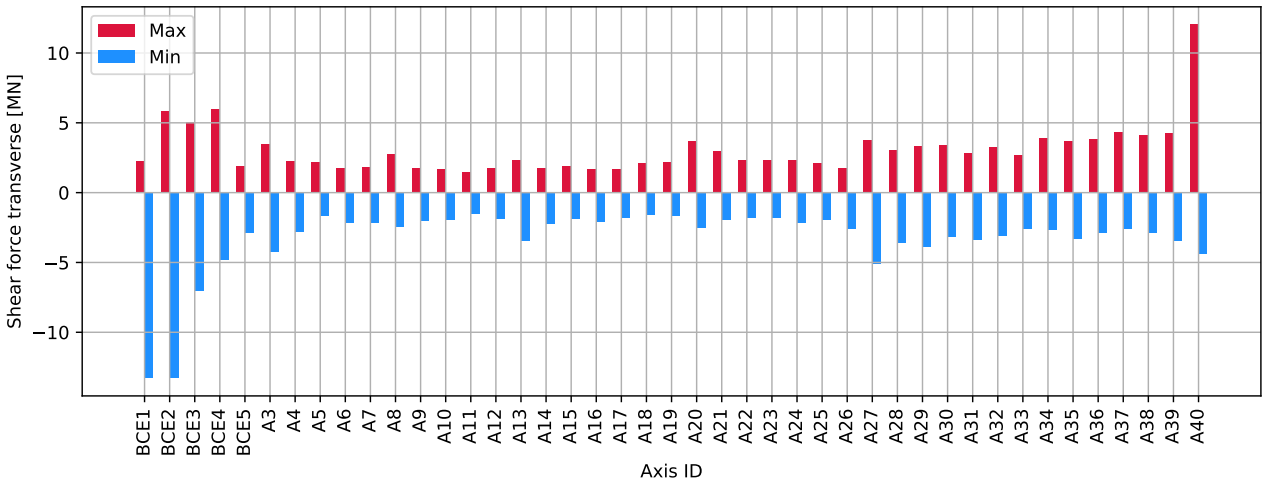

Figure 3.1210: P A40 80deg - columns bottom : Shear force transverse [MN]

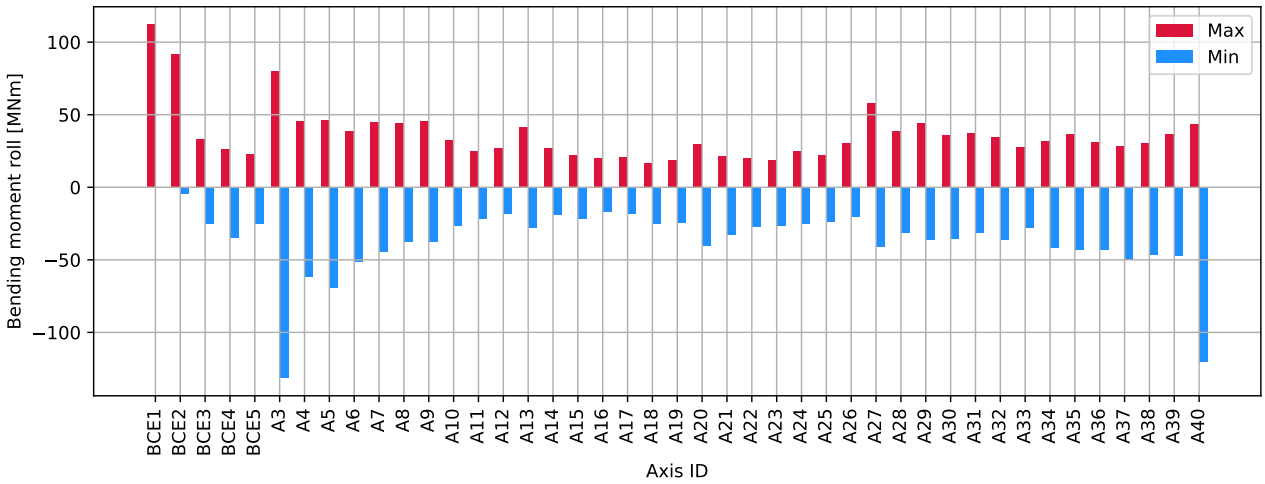

Figure 3.1211: P A40 80deg - columns bottom : Bending moment roll [MNm]

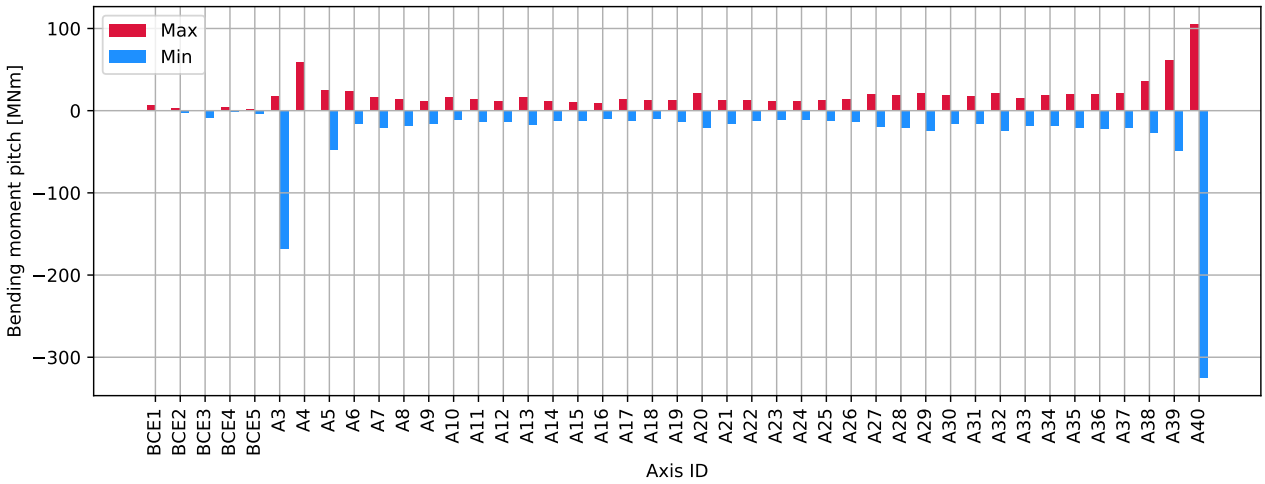

Figure 3.1212: P A40 80deg - columns bottom : Bending moment pitch [MNm]

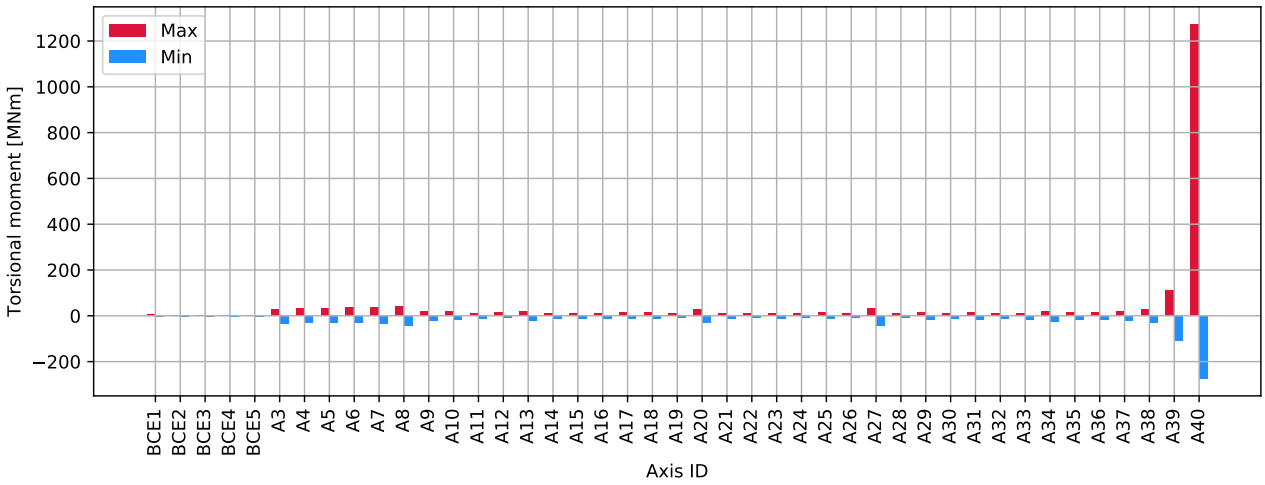

Figure 3.1213: P A40 80deg - columns bottom : Torsional moment [MNm]

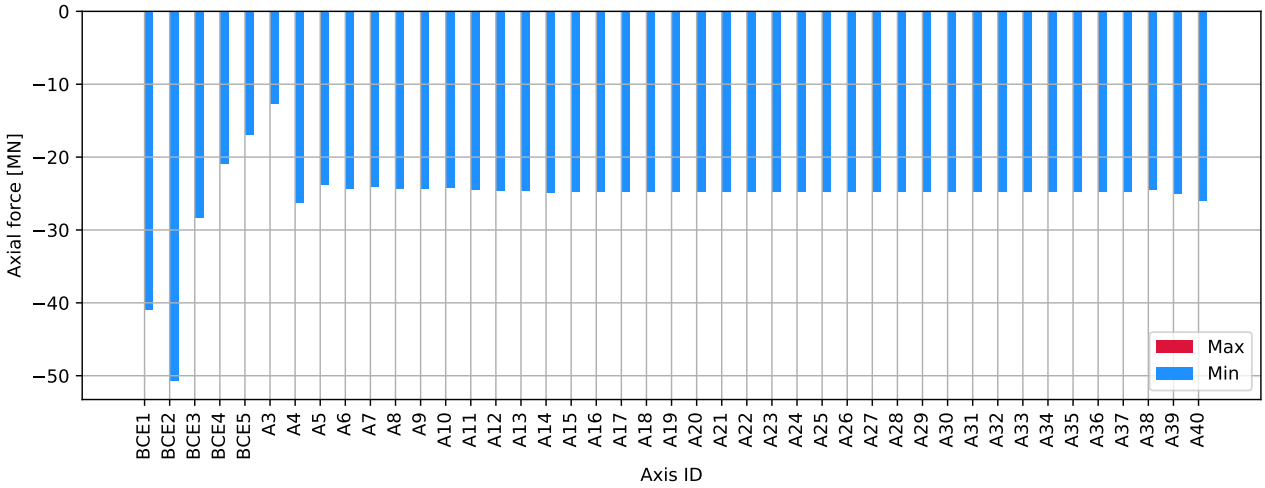

Figure 3.1214: P A40 80deg - columns top : Axial force [MN]

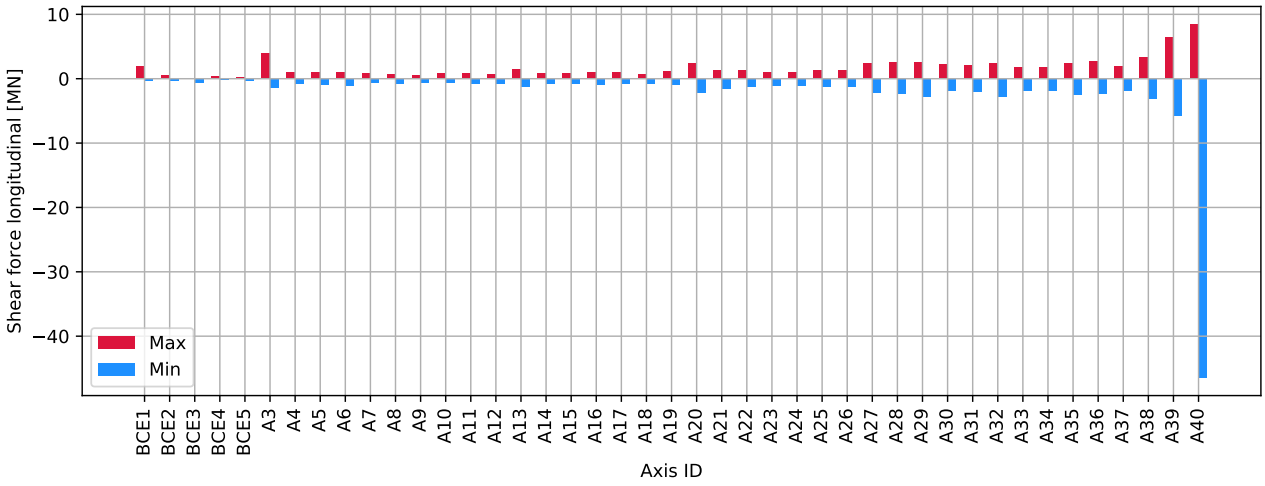

Figure 3.1215: P A40 80deg - columns top : Shear force longitudinal [MN]

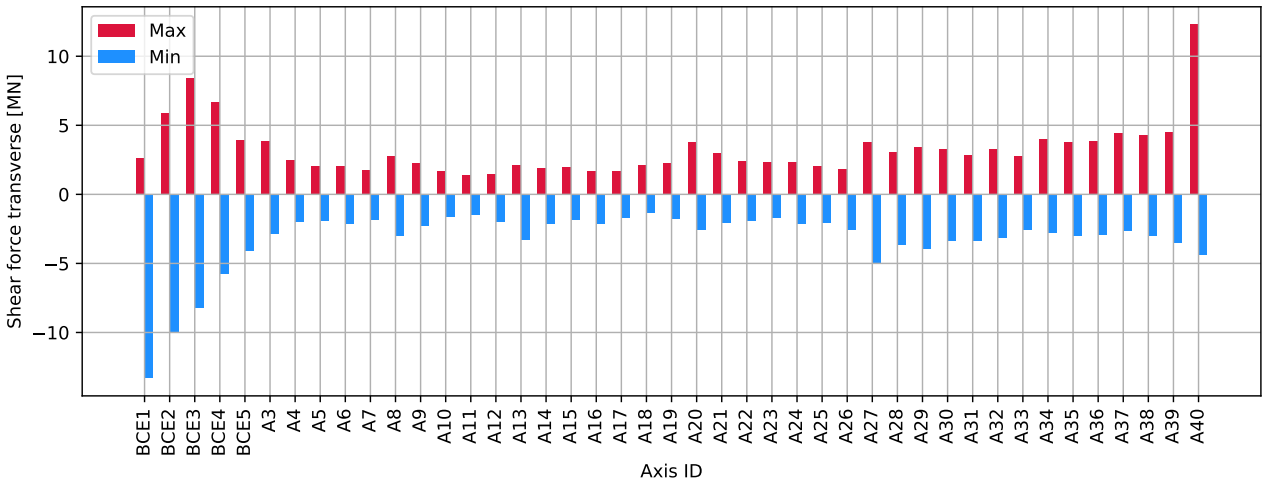

Figure 3.1216: P A40 80deg - columns top : Shear force transverse [MN]

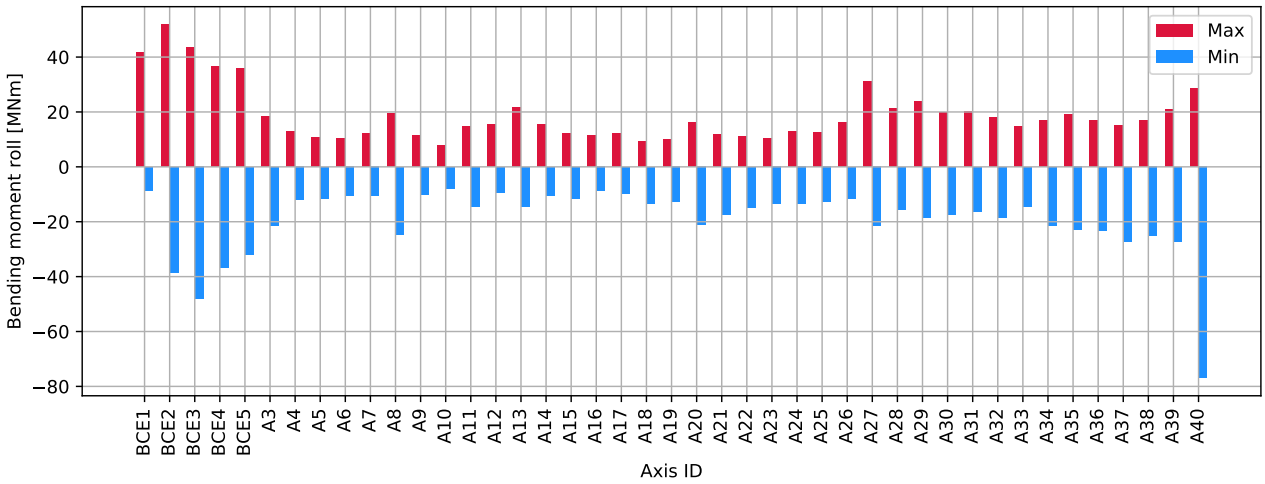

Figure 3.1217: P A40 80deg - columns top : Bending moment roll [MNm]

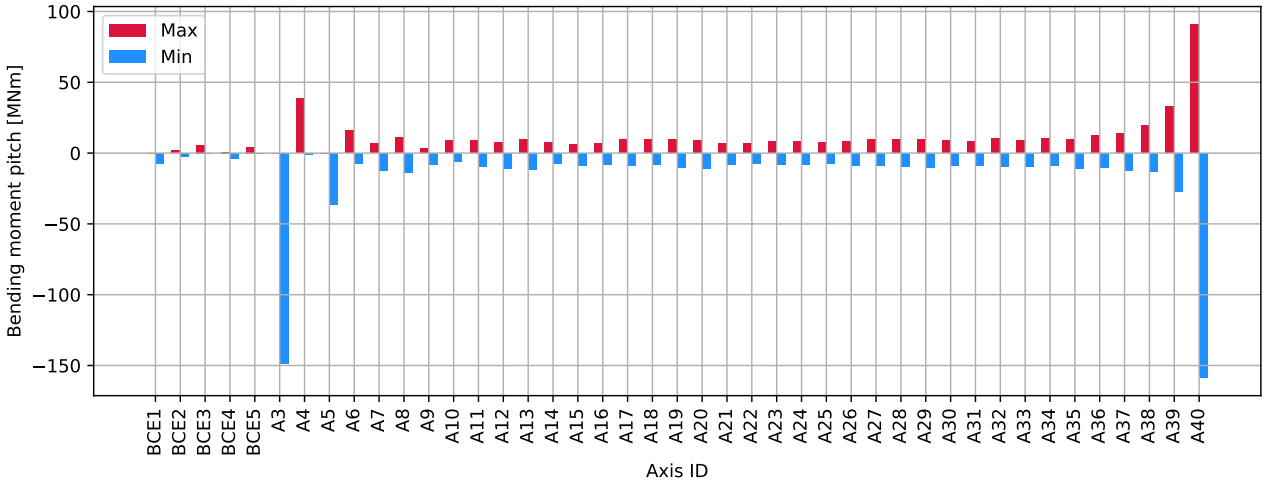

Figure 3.1218: P A40 80deg - columns top : Bending moment pitch [MNm]

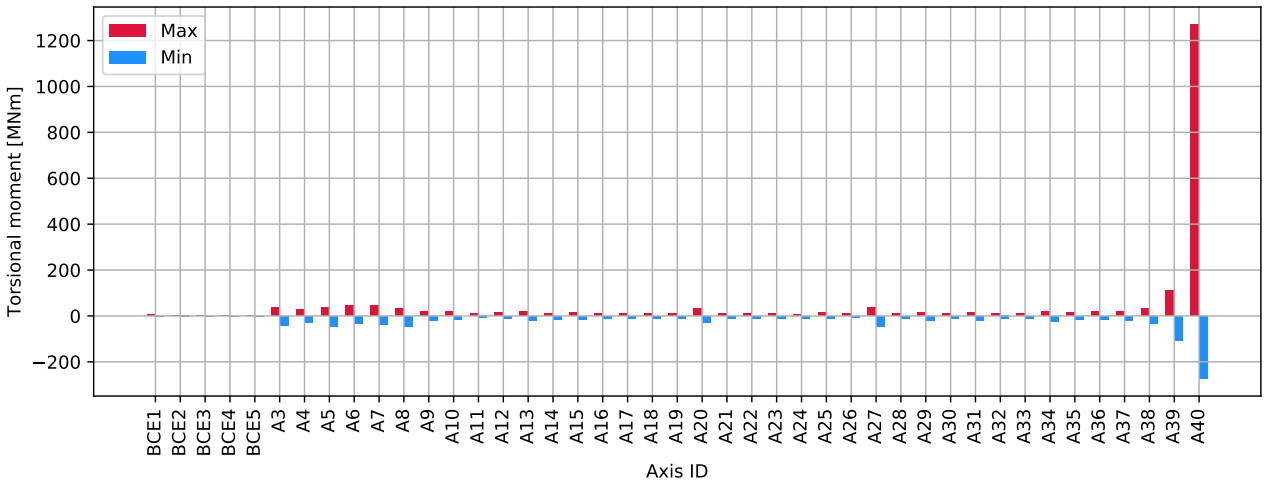

Figure 3.1219: P A40 80deg - columns top : Torsional moment [MNm]

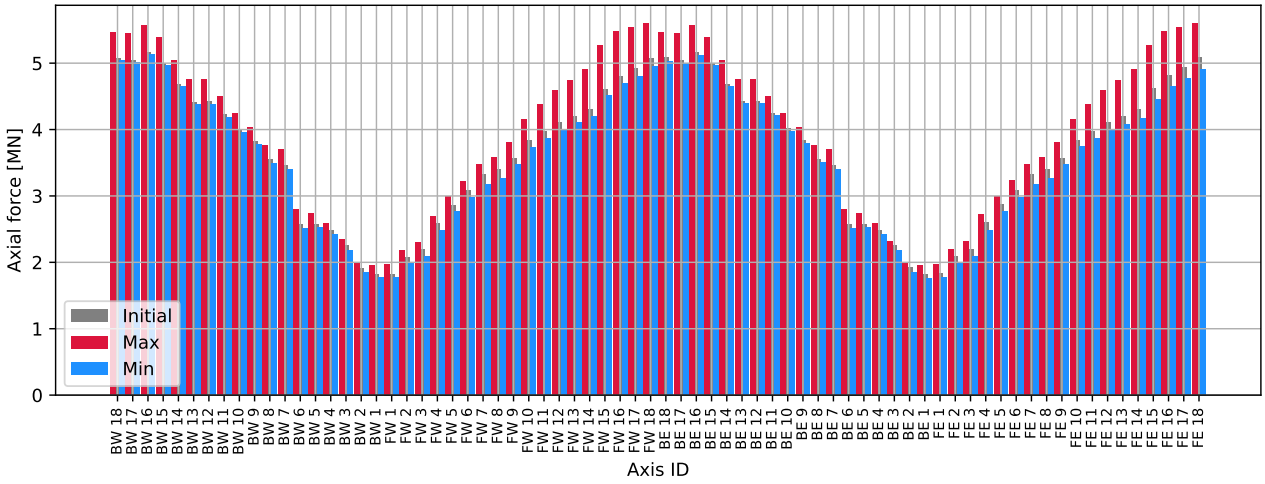

Figure 3.1220: P A40 80deg - cables : Axial force [MN]

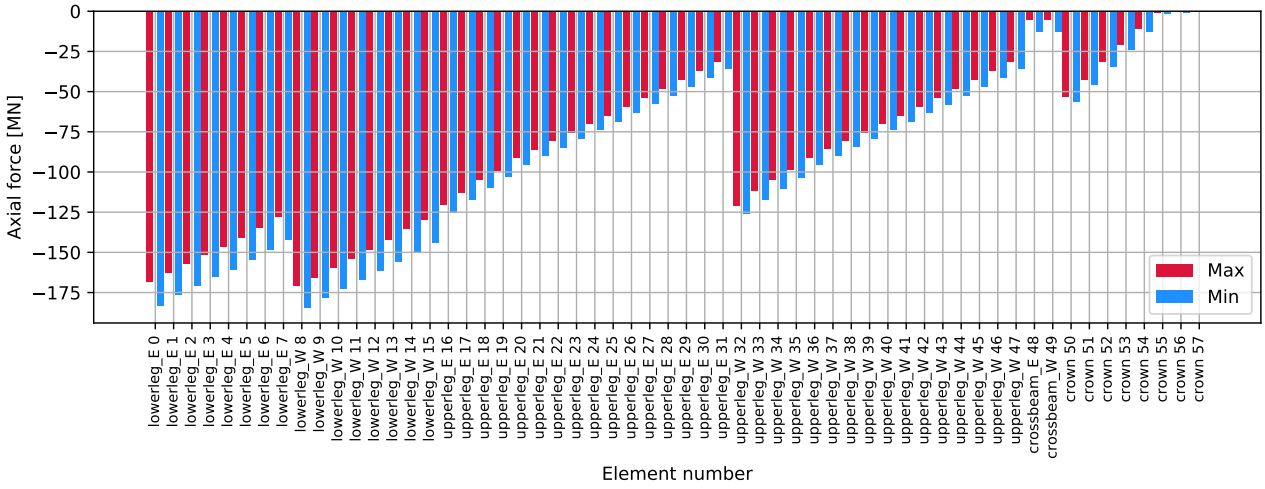

Figure 3.1221: P A40 80deg - tower: Axial force [MN]

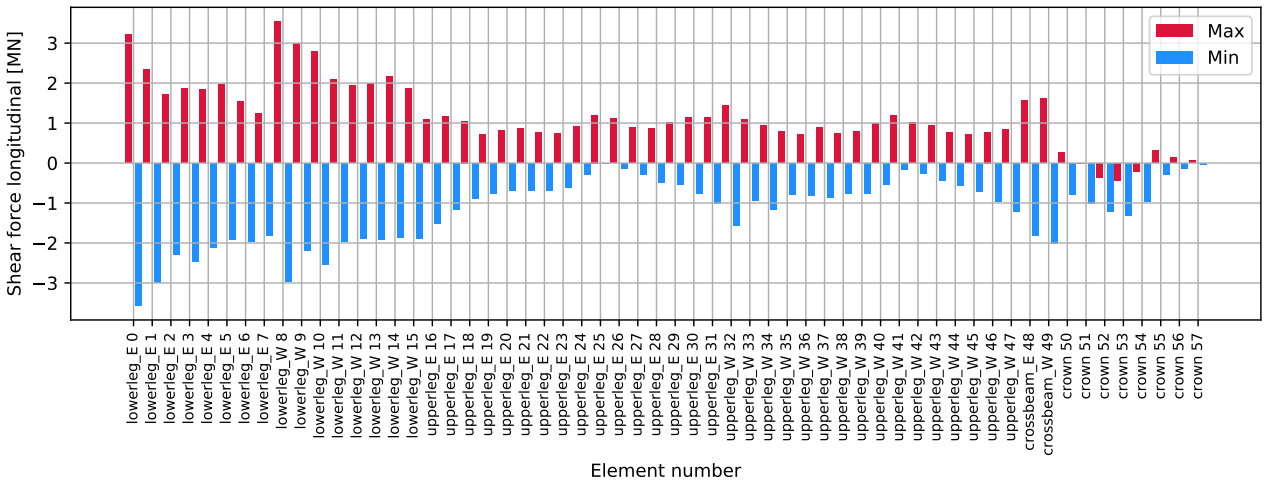

Figure 3.1222: P A40 80deg - tower: Shear force longitudinal [MN]

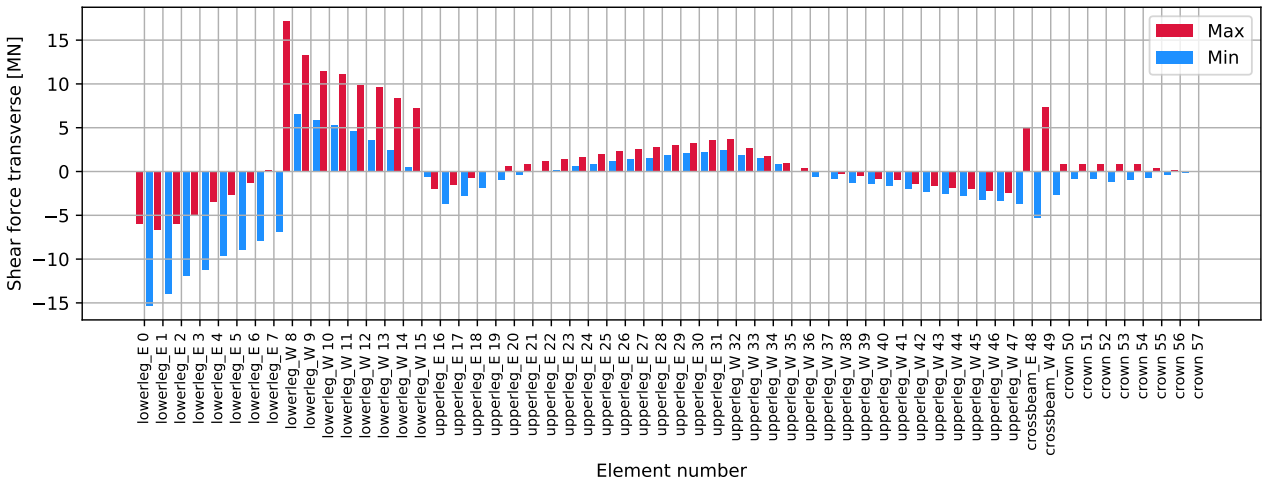

Figure 3.1223: P A40 80deg - tower: Shear force transverse [MN]

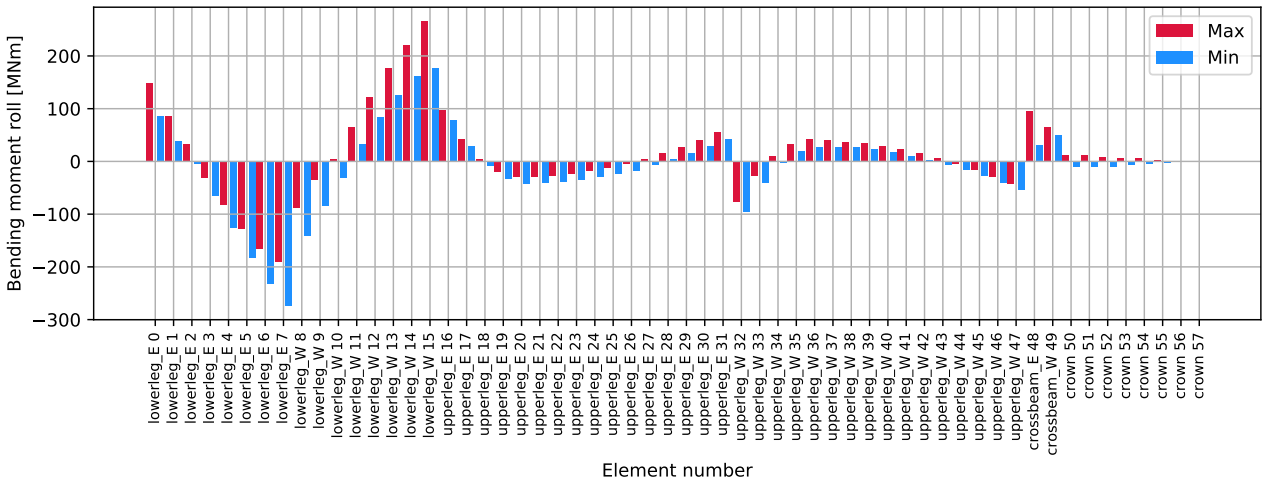

Figure 3.1224: P A40 80deg - tower: Bending moment roll [MNm]

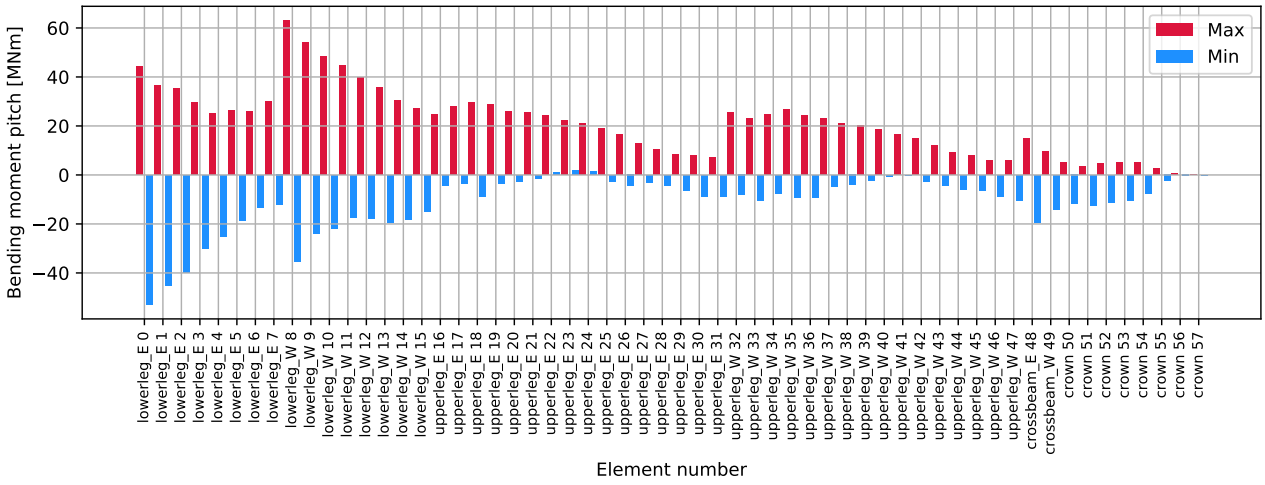

Figure 3.1225: P A40 80deg - tower: Bending moment pitch [MNm]

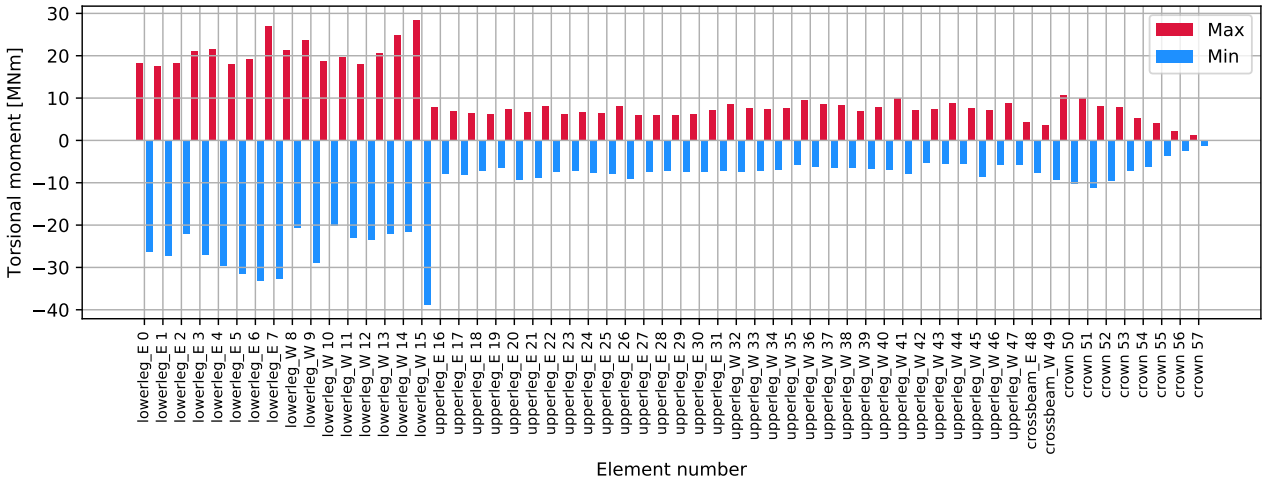

Figure 3.1226: P A40 80deg - tower: Torsional moment [MNm]

3.27.3 Time series

Note : Time series are filtered using a Saviotzky-Golay filter for increased readability of the time history plots. Hence, maximum values that occur due to a rapid vibration are not shown in the plots. For maximum values, refer to the tabulated data.
All elements are numbered from South to North, bottom to top

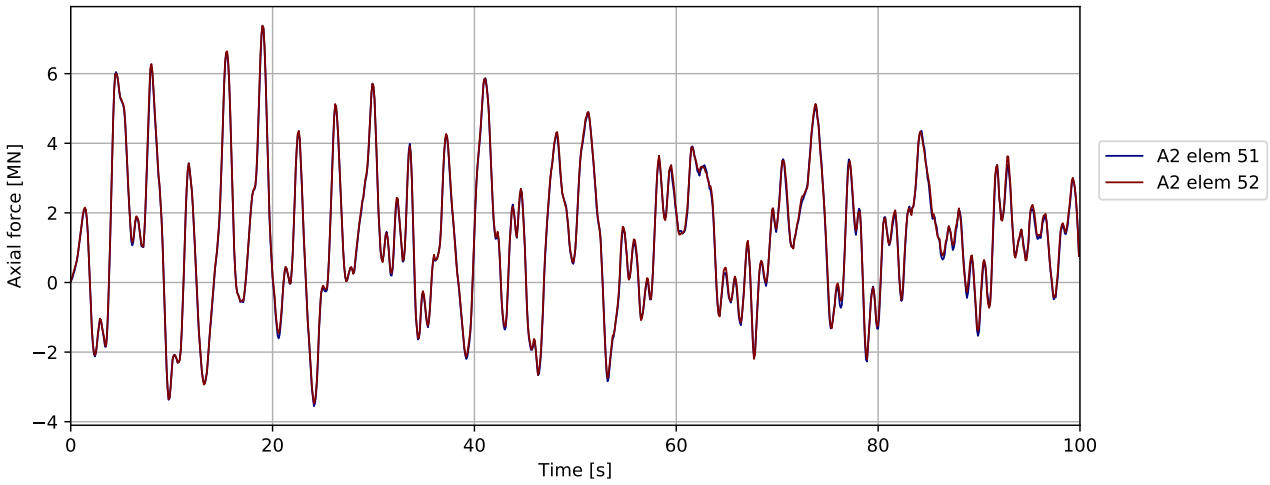

Figure 3.1227: P A40 80deg - bridgegirder @ pylon: Axial force [MN]

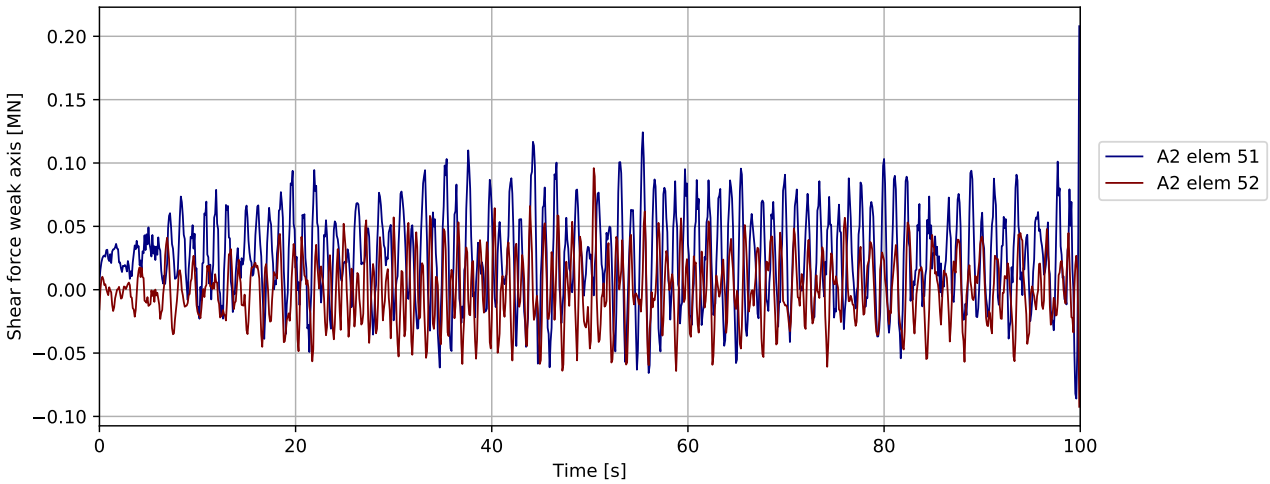

Figure 3.1228: P A40 80deg - bridgegirder @ pylon: Shear force weak axis [MN]