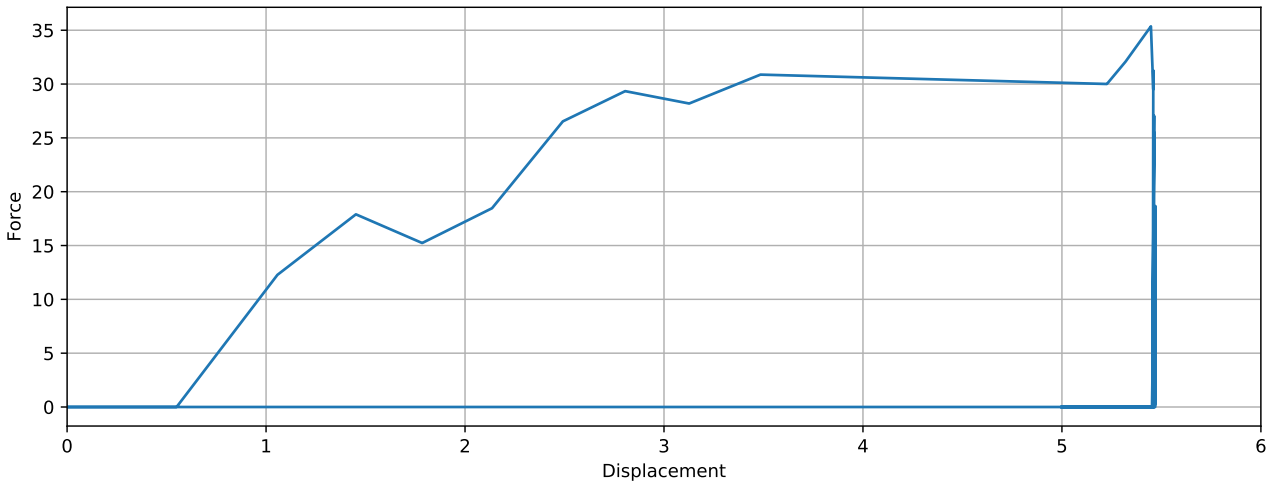

Figure 3.555: Simulated local collision force-displacement

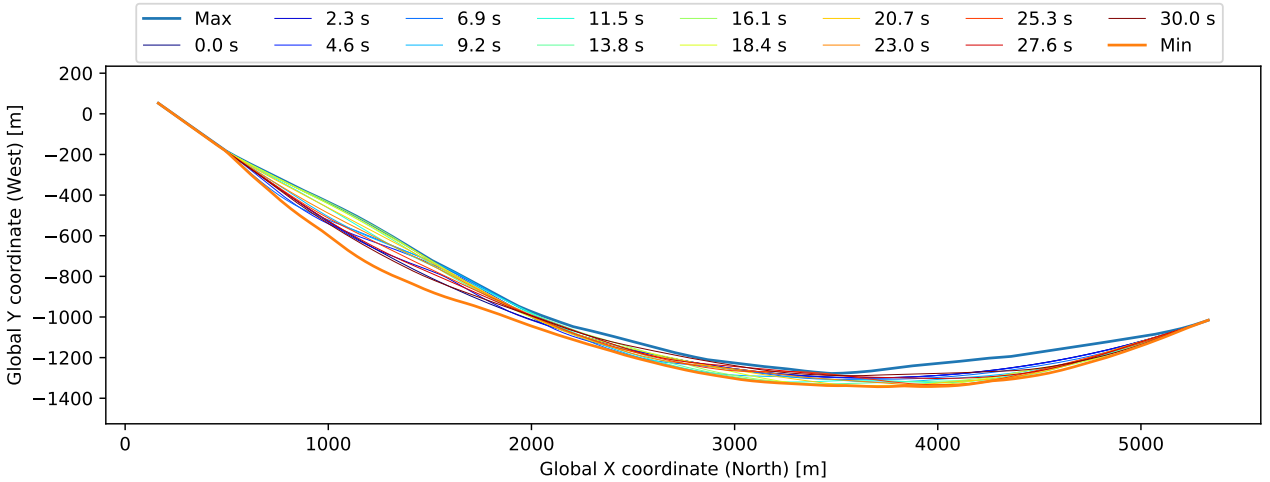

Figure 3.556: Bridgegirder deflection (10x displacment scaling)

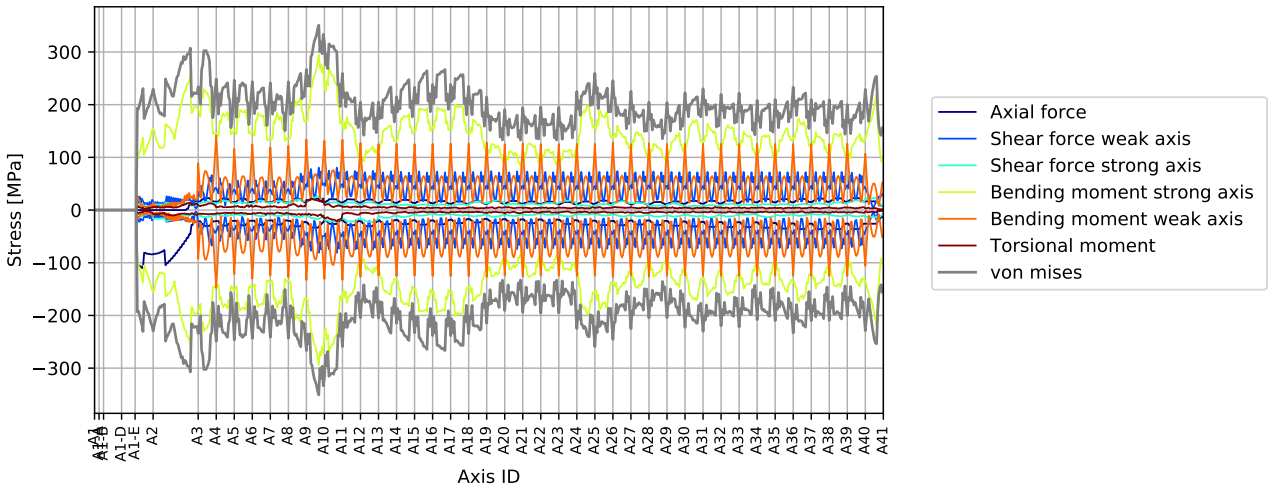

Figure 3.557: Stress envelope from all force components

3.13.2 Envelope plots

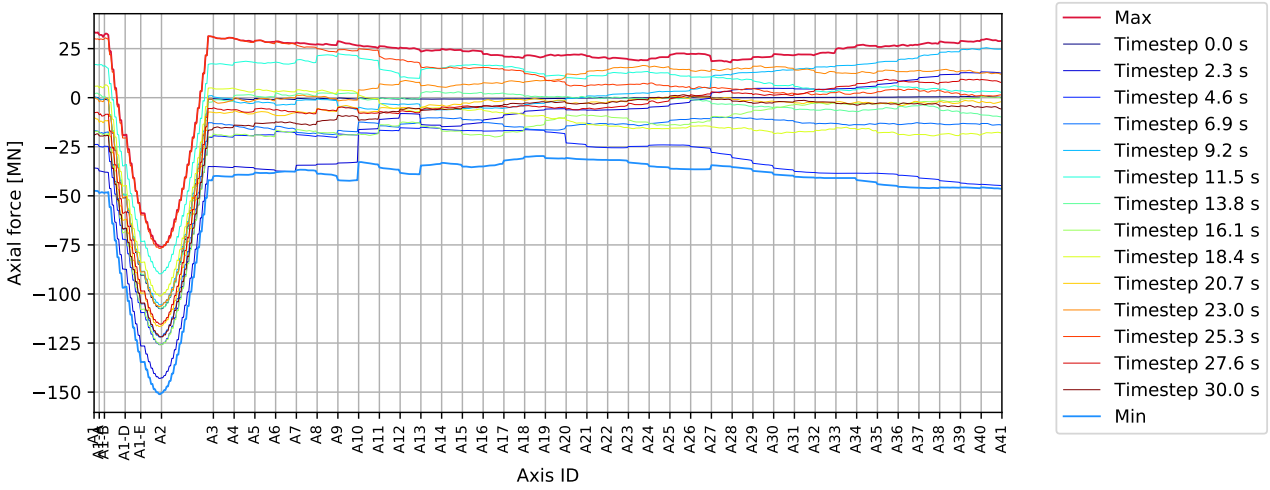

Figure 3.558: P A10 45deg - bridgegirder : Axial force [MN]

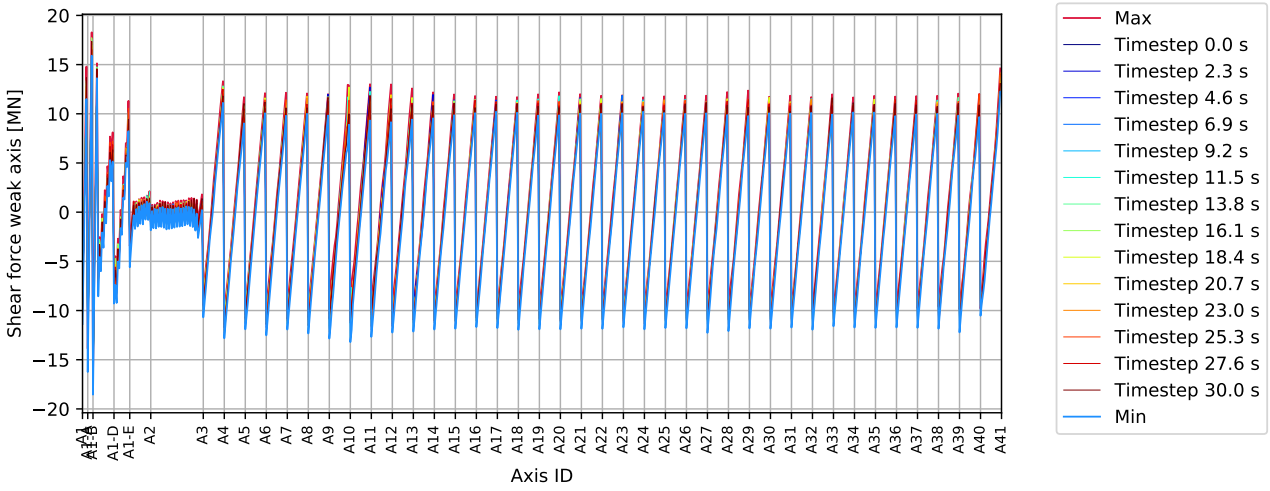

Figure 3.559: P A10 45deg - bridgegirder : Shear force weak axis [MN]

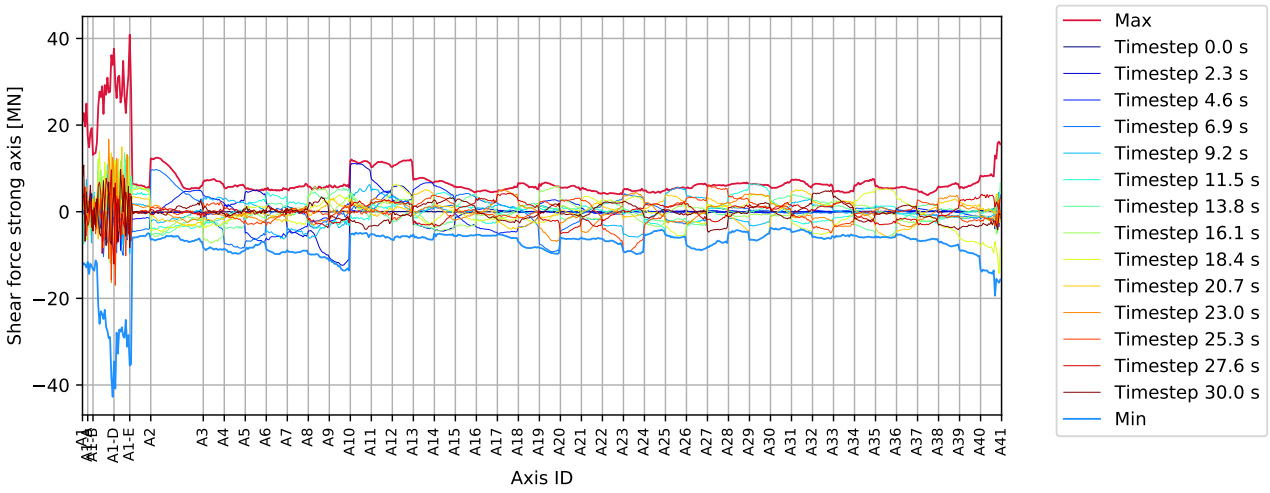

Figure 3.560: P A10 45deg - bridgegirder : Shear force strong axis [MN]

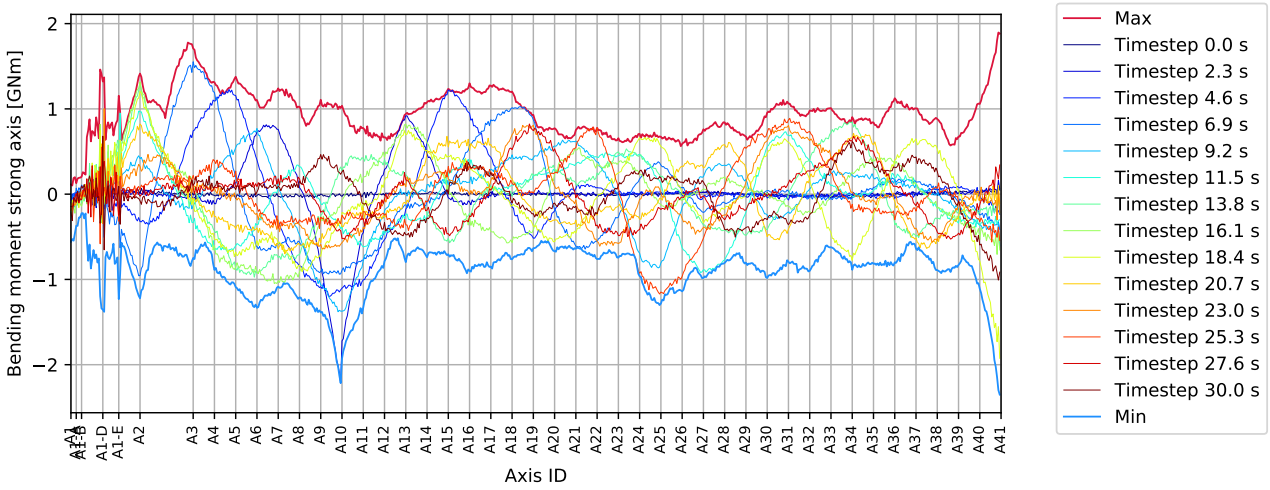

Figure 3.561: P A10 45deg - bridgegirder : Bending moment strong axis [GNm]

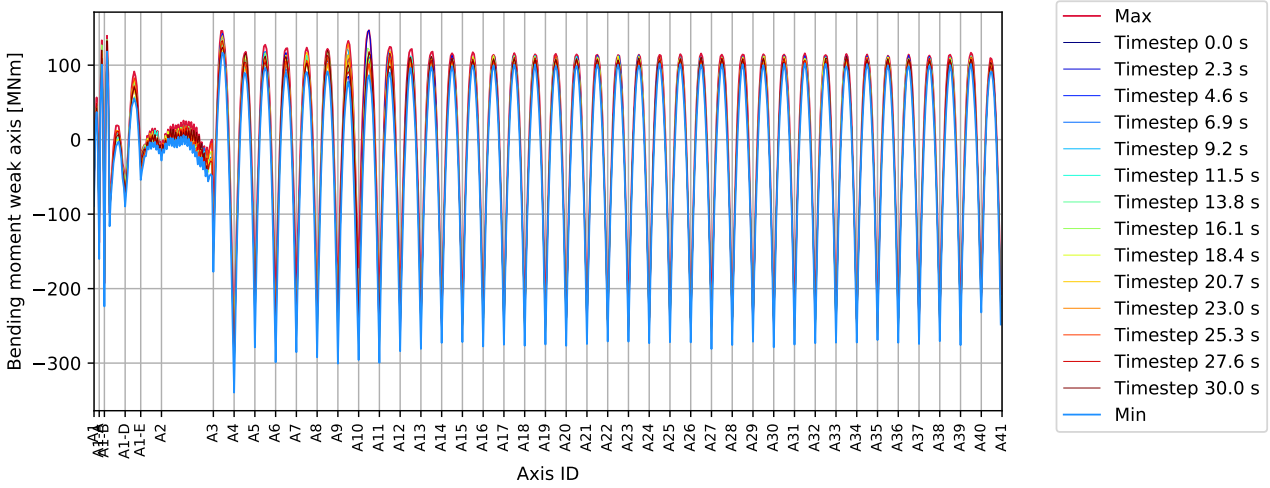

Figure 3.562: P A10 45deg - bridgegirder : Bending moment weak axis [MNm]

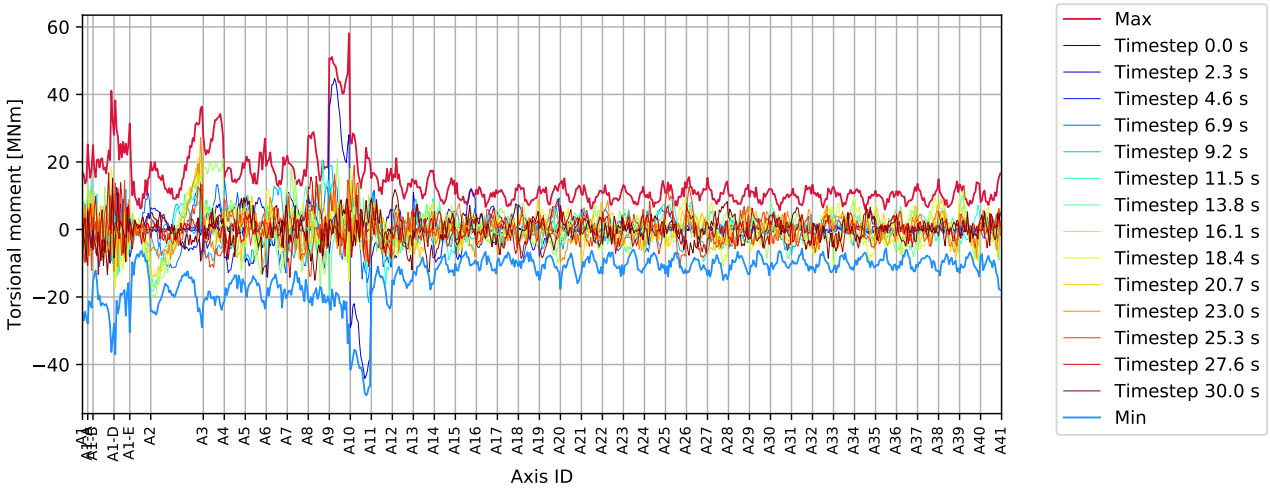

Figure 3.563: P A10 45deg - bridgegirder : Torsional moment [MNm]

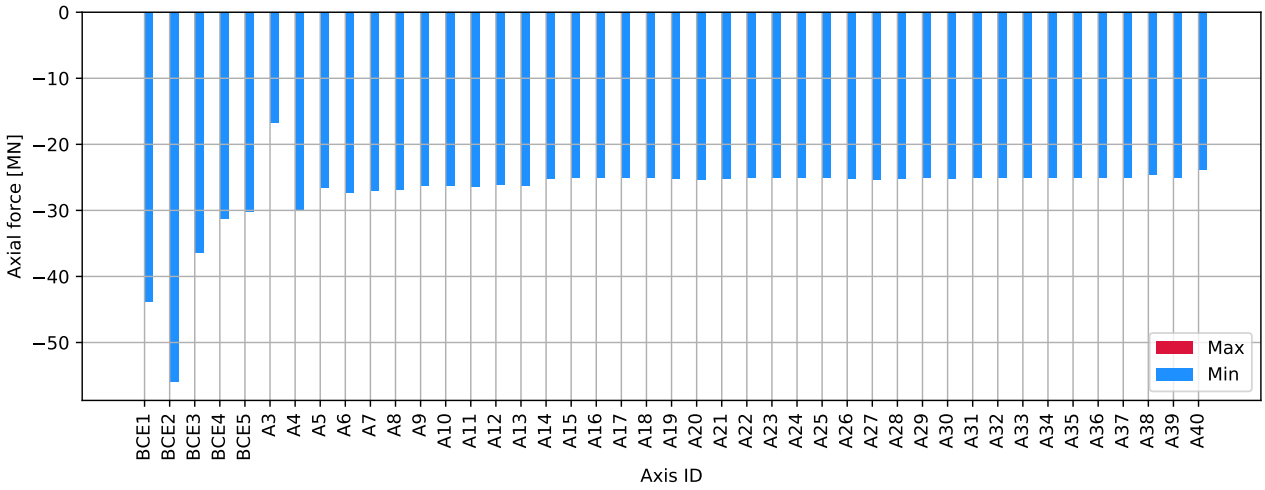

Figure 3.564: P A10 45deg - columns bottom : Axial force [MN]

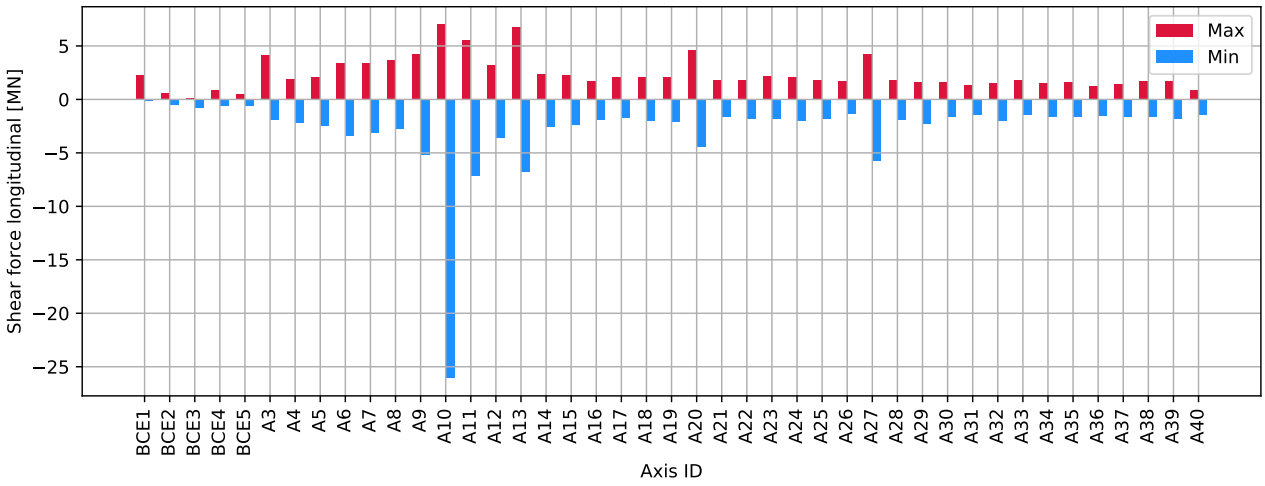

Figure 3.565: P A10 45deg - columns bottom : Shear force longitudinal [MN]

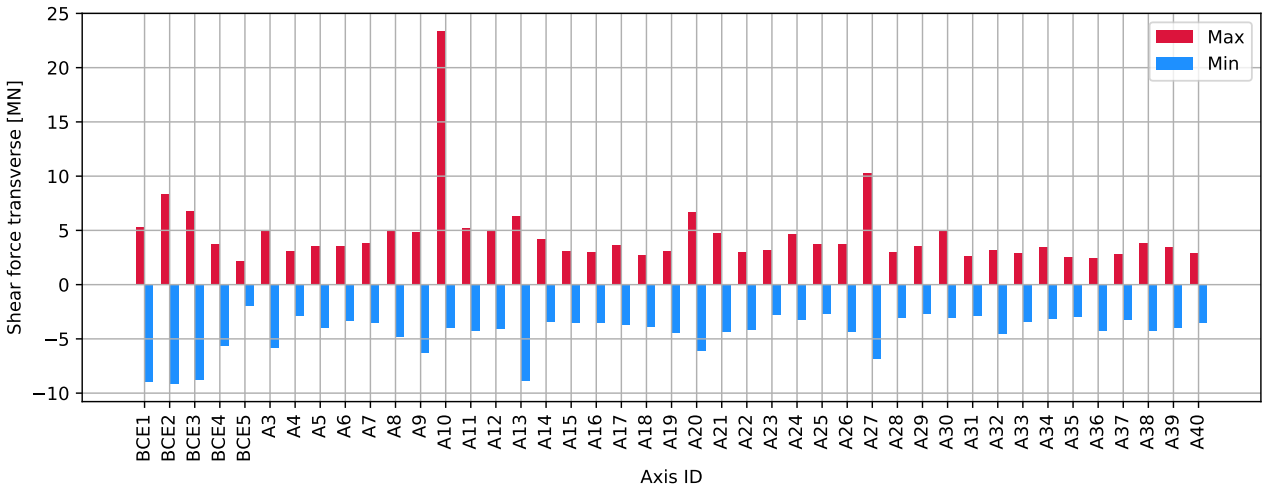

Figure 3.566: P A10 45deg - columns bottom : Shear force transverse [MN]

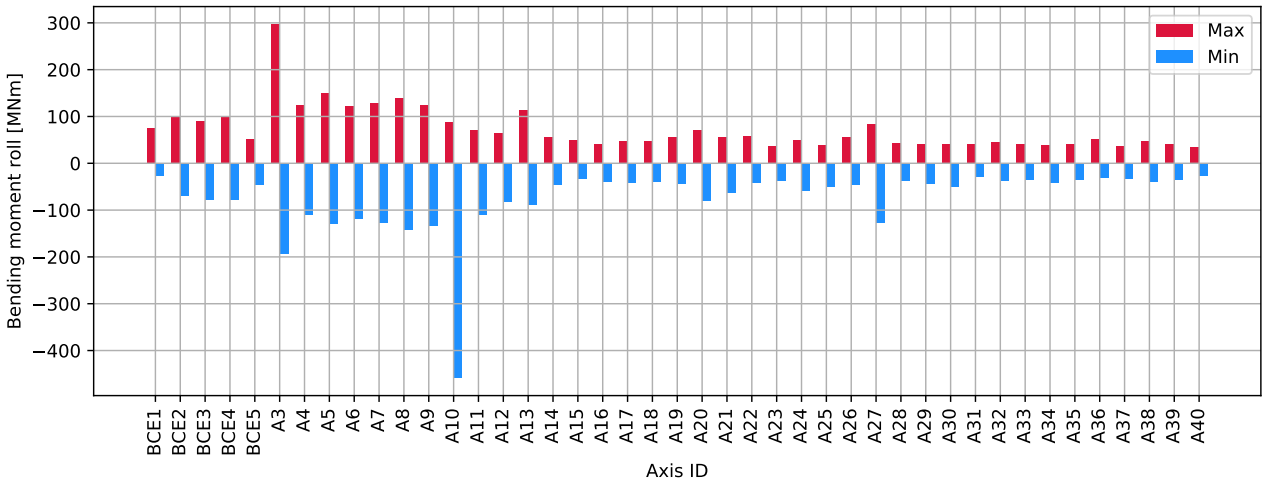

Figure 3.567: P A10 45deg - columns bottom : Bending moment roll [MNm]

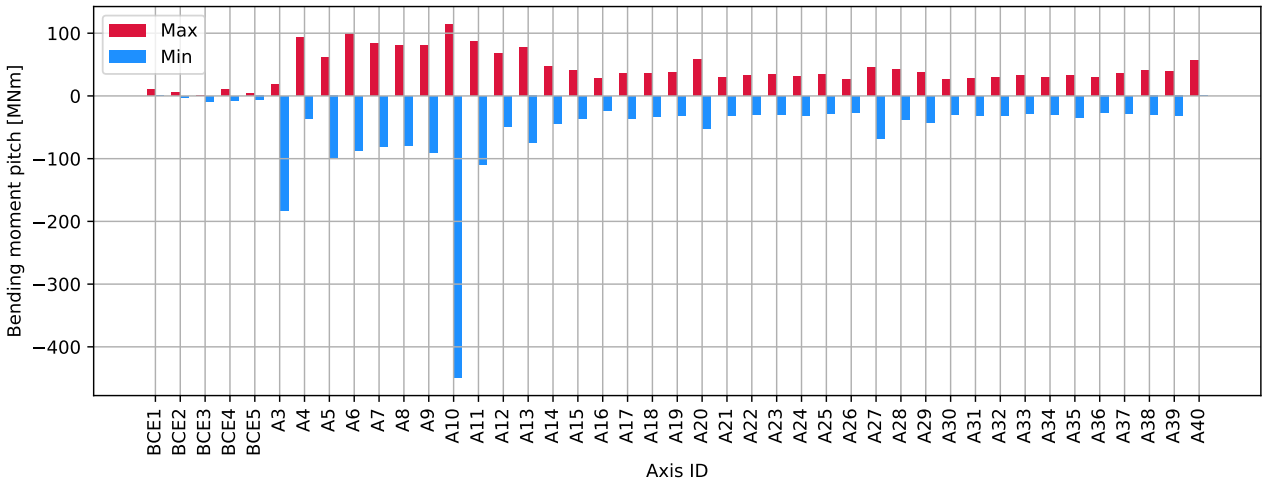

Figure 3.568: P A10 45deg - columns bottom : Bending moment pitch [MNm]

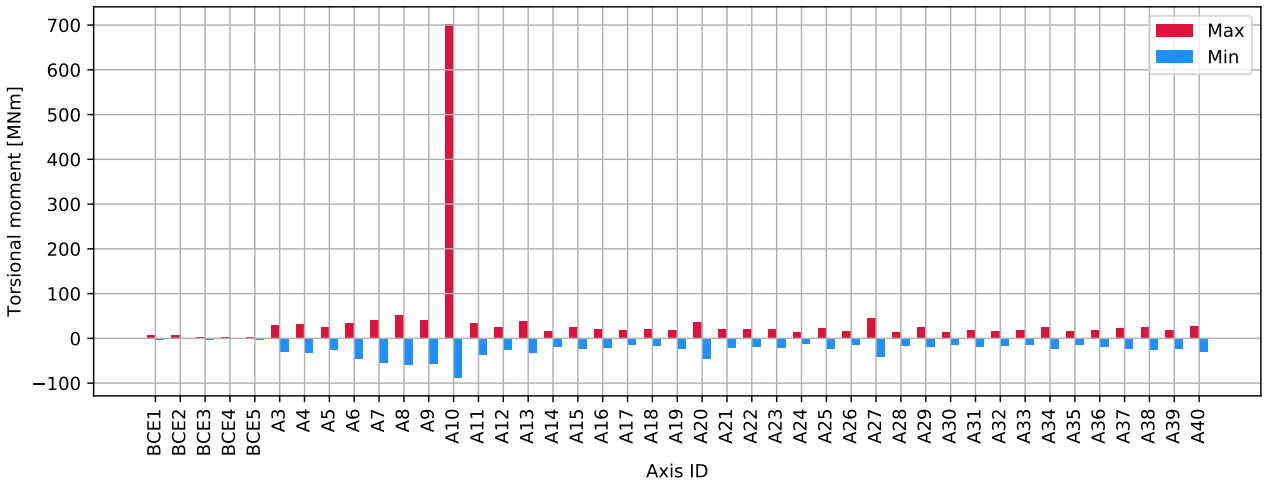

Figure 3.569: P A10 45deg - columns bottom : Torsional moment [MNm]

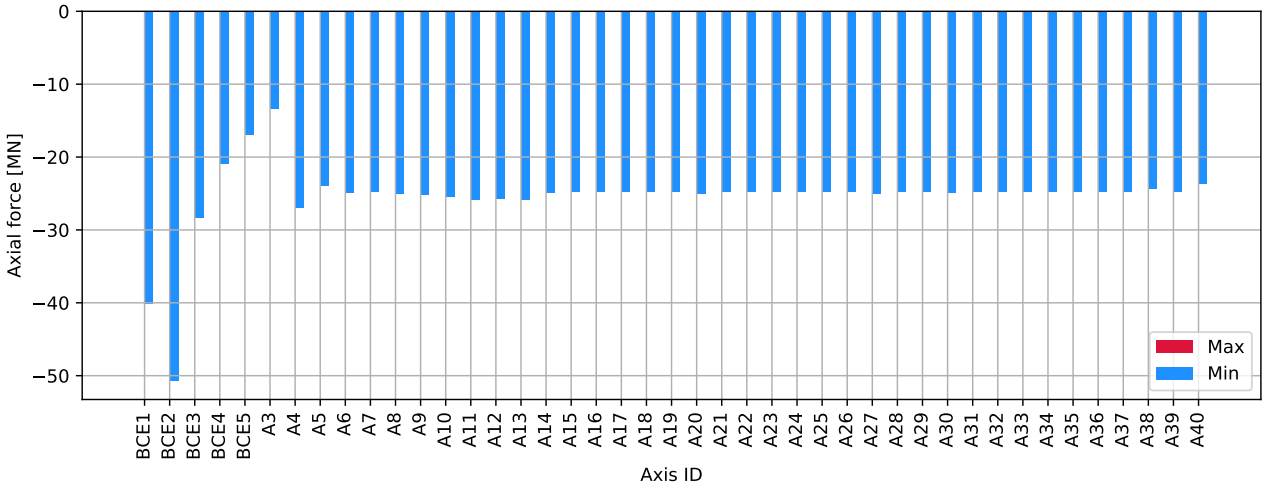

Figure 3.570: P A10 45deg - columns top : Axial force [MN]

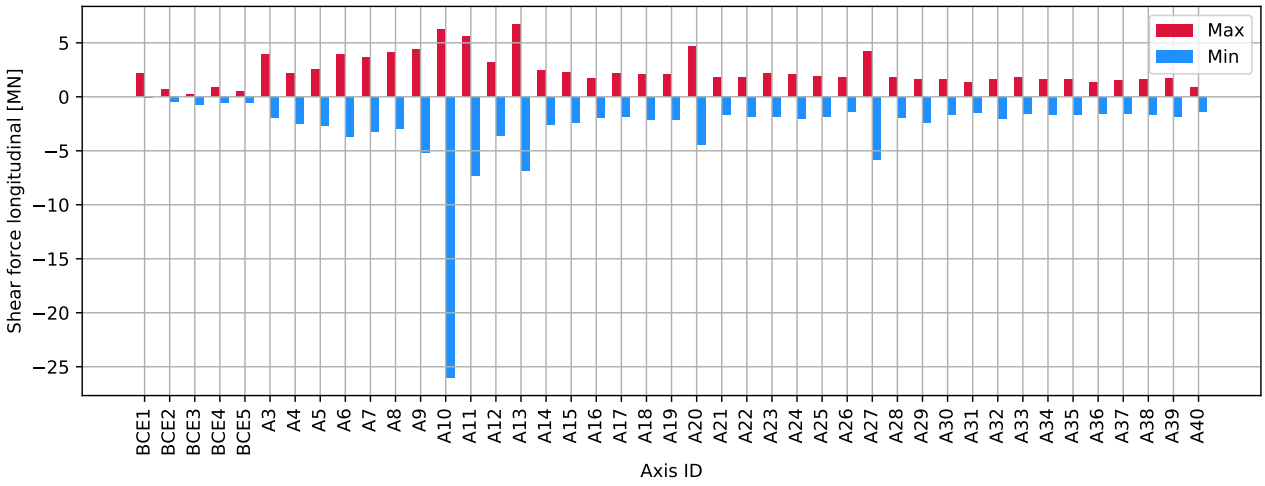

Figure 3.571: P A10 45deg - columns top : Shear force longitudinal [MN]

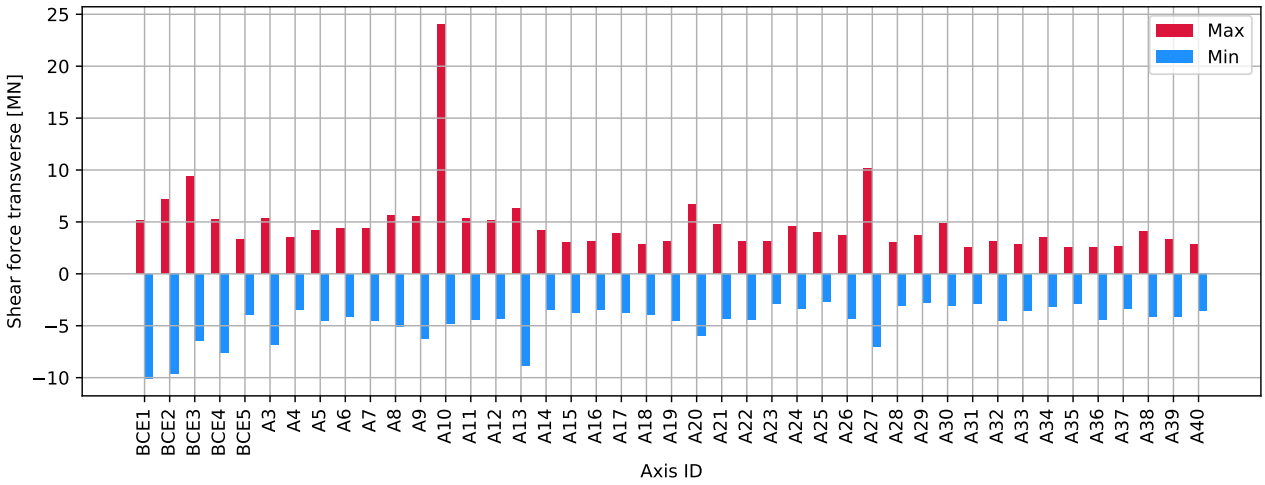

Figure 3.572: P A10 45deg - columns top : Shear force transverse [MN]

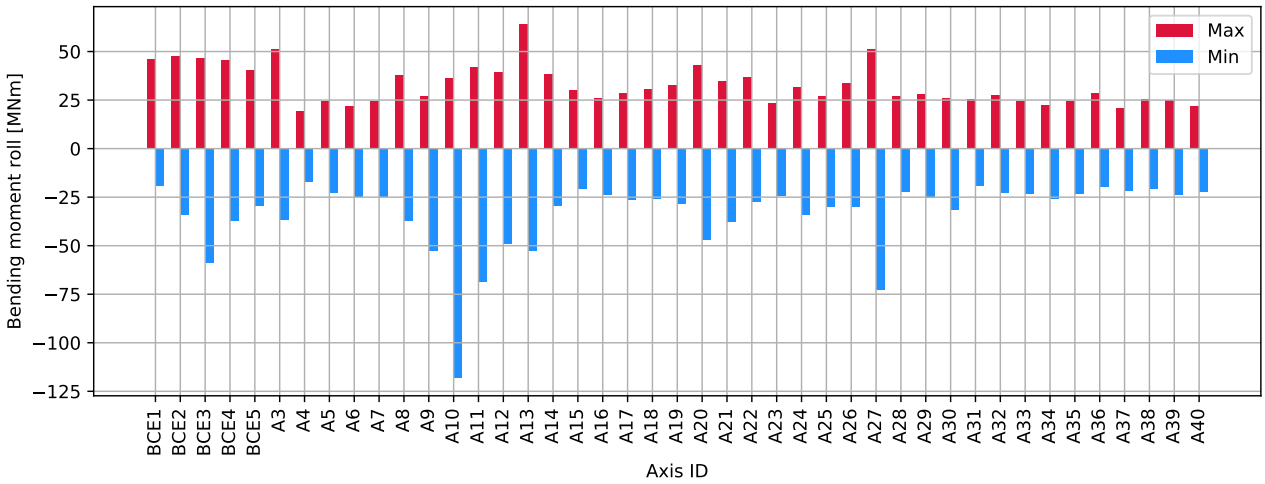

Figure 3.573: P A10 45deg - columns top : Bending moment roll [MNm]

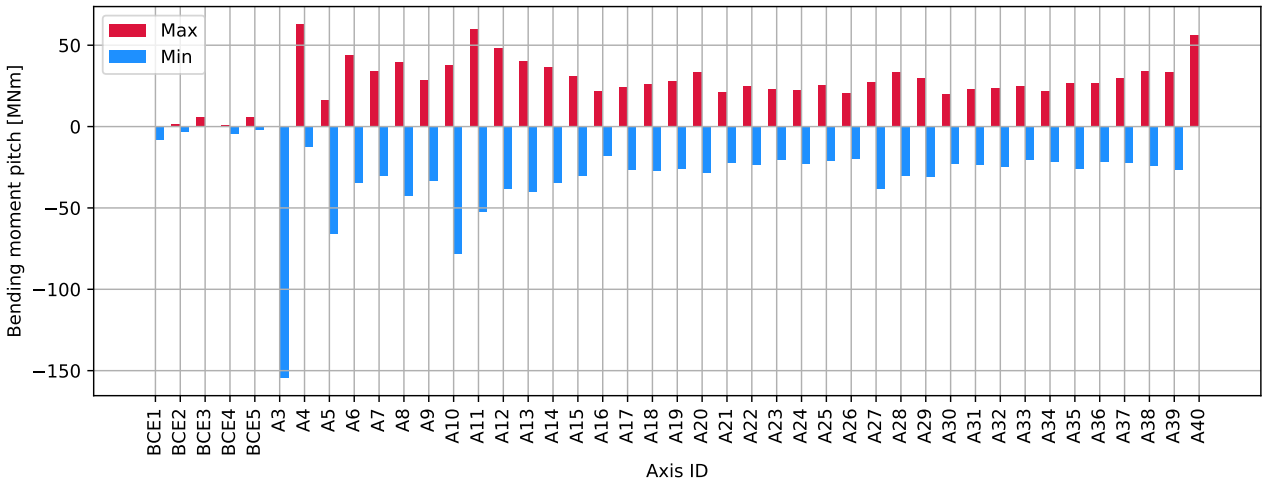

Figure 3.574: P A10 45deg - columns top : Bending moment pitch [MNm]

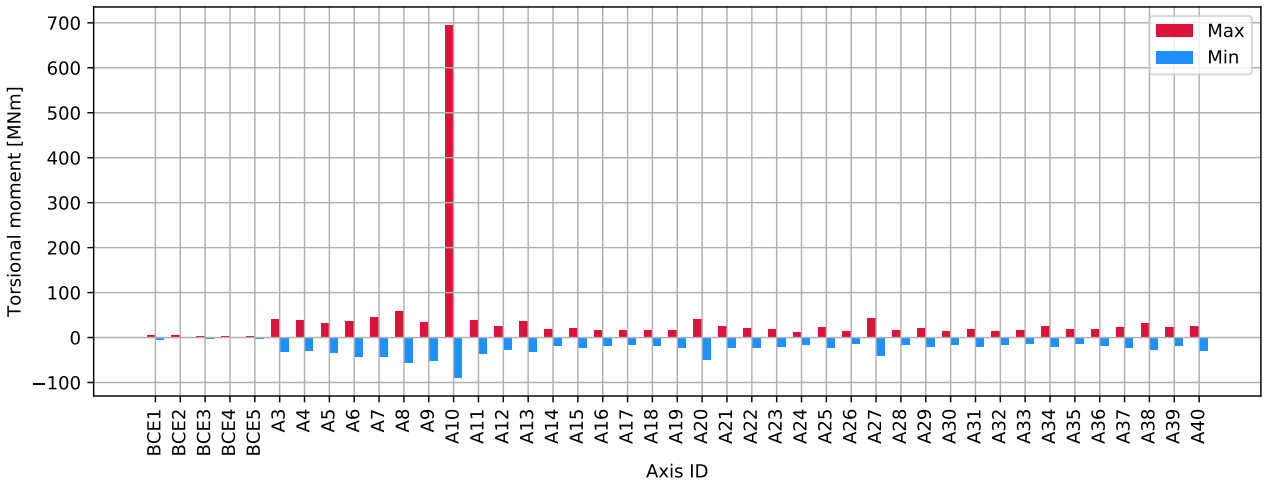

Figure 3.575: P A10 45deg - columns top : Torsional moment [MNm]

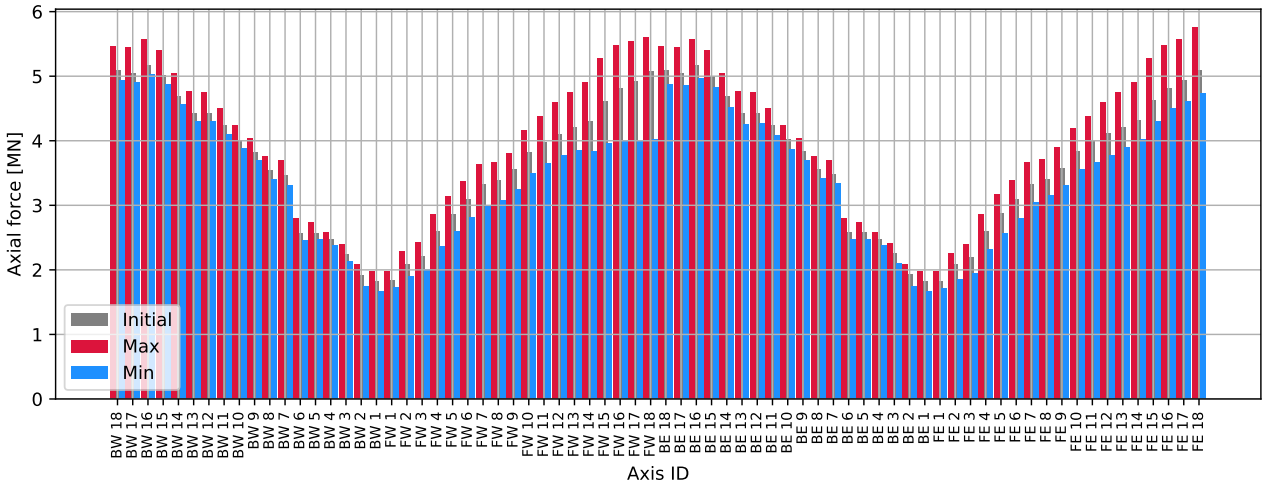

Figure 3.576: P A10 45deg - cables : Axial force [MN]

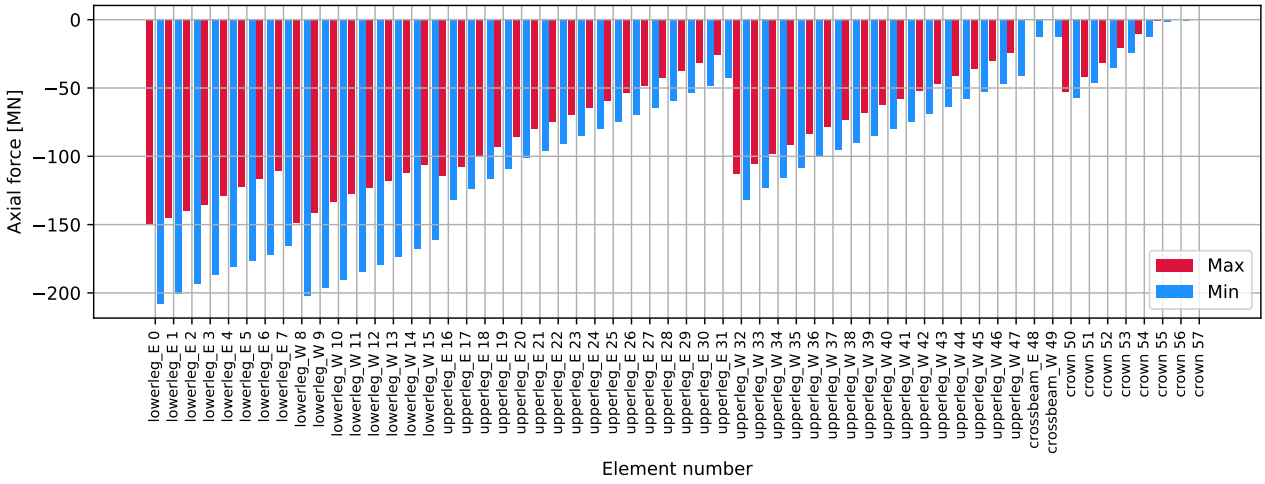

Figure 3.577: P A10 45deg - tower: Axial force [MN]

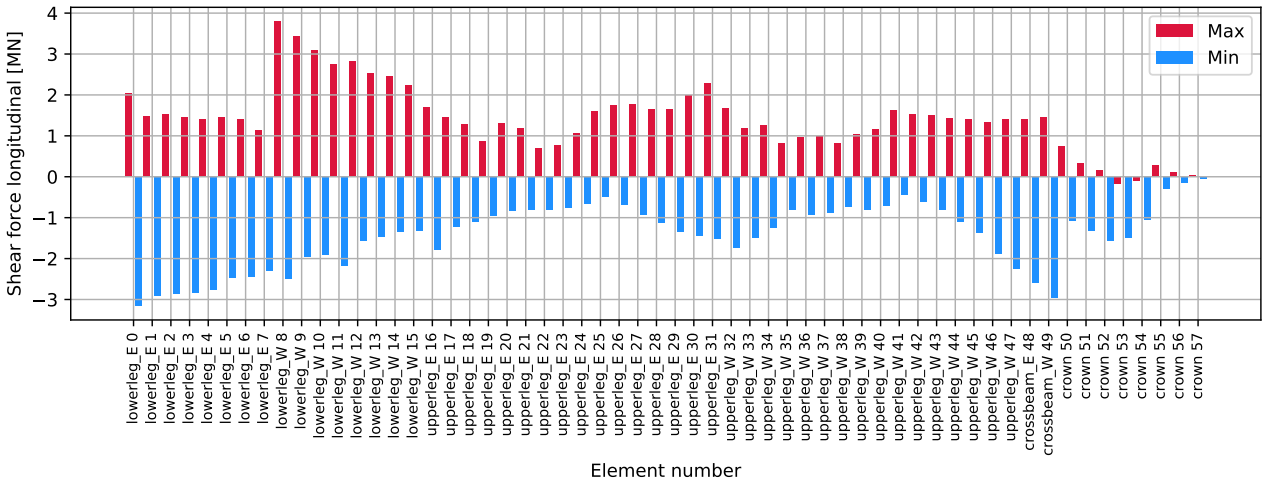

Figure 3.578: P A10 45deg - tower: Shear force longitudinal [MN]

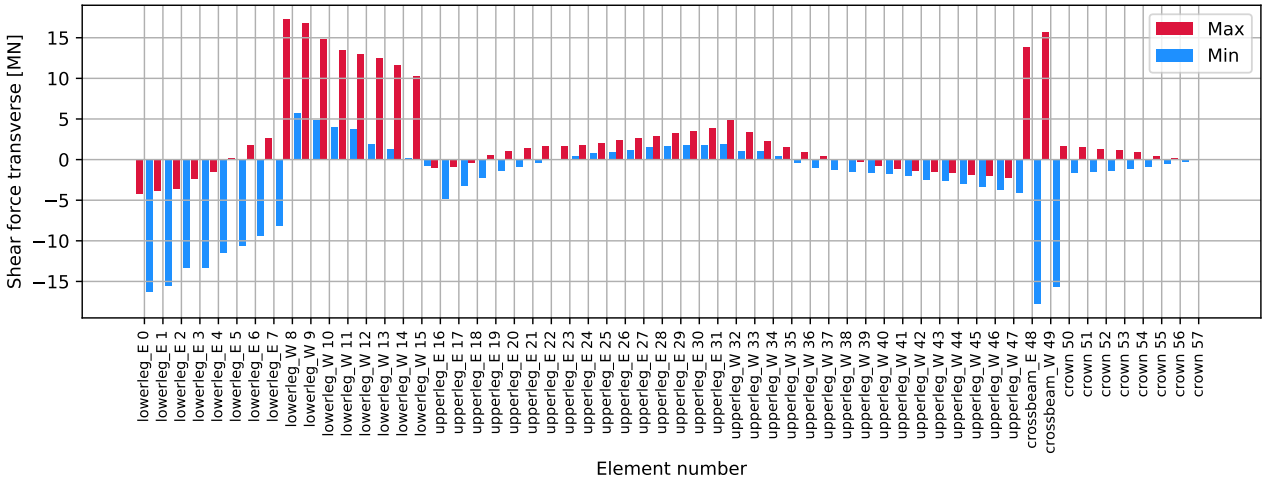

Figure 3.579: P A10 45deg - tower: Shear force transverse [MN]

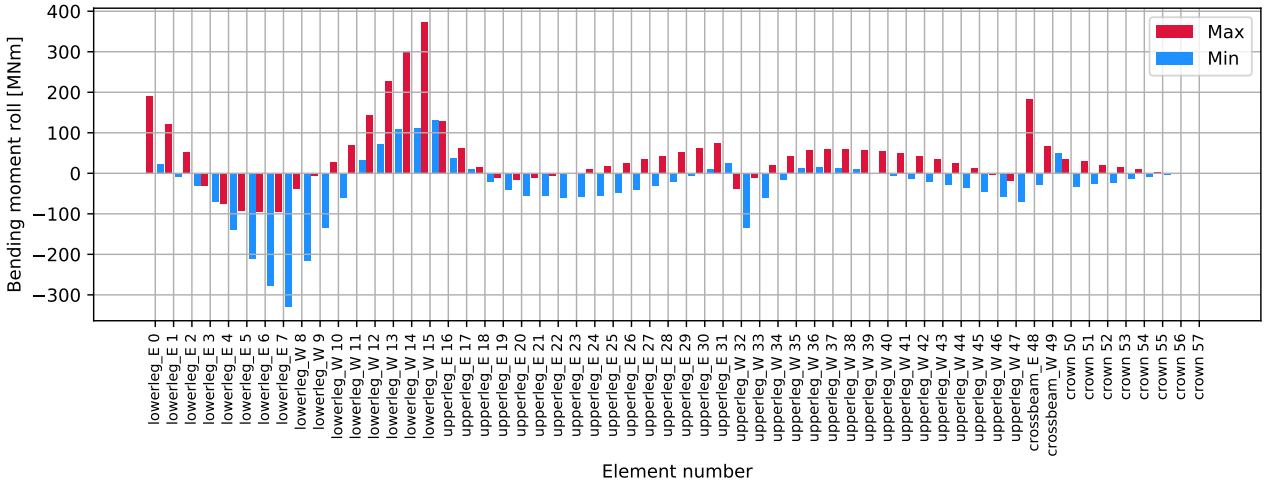

Figure 3.580: P A10 45deg - tower: Bending moment roll [MNm]

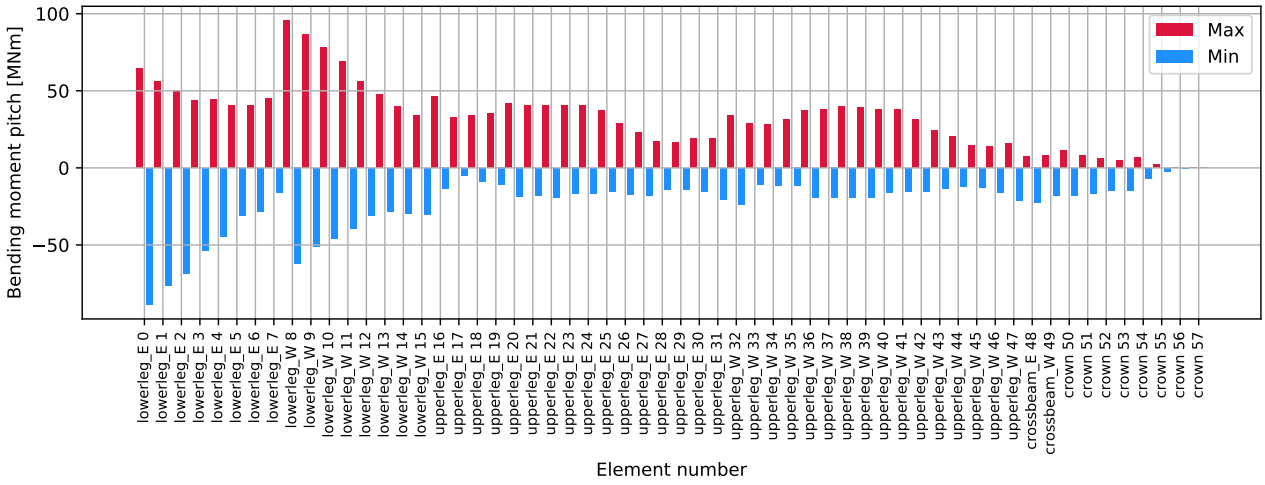

Figure 3.581: P A10 45deg - tower: Bending moment pitch [MNm]

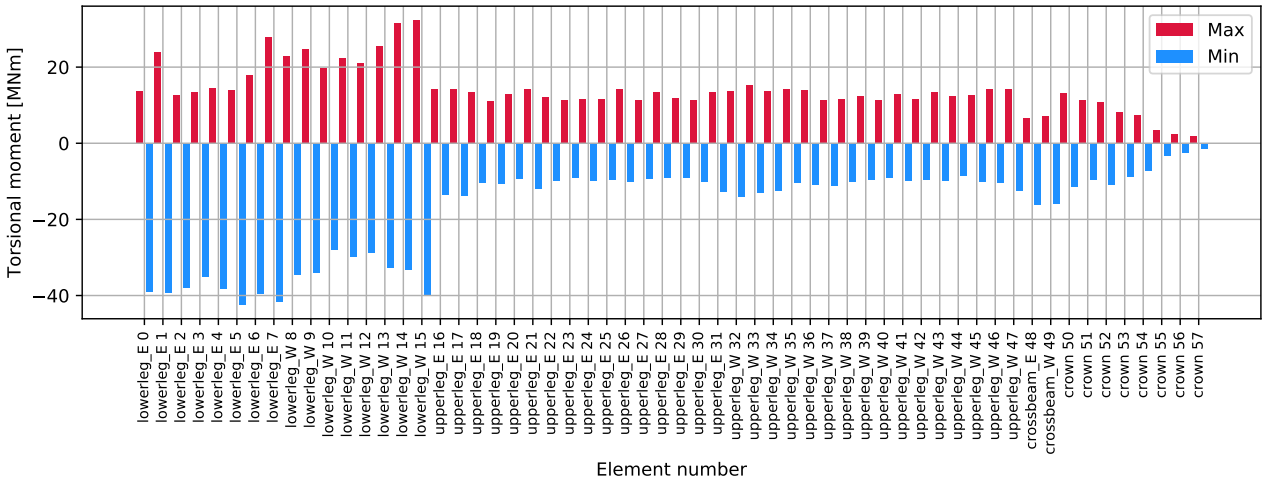

Figure 3.582: P A10 45deg - tower: Torsional moment [MNm]

3.13.3 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

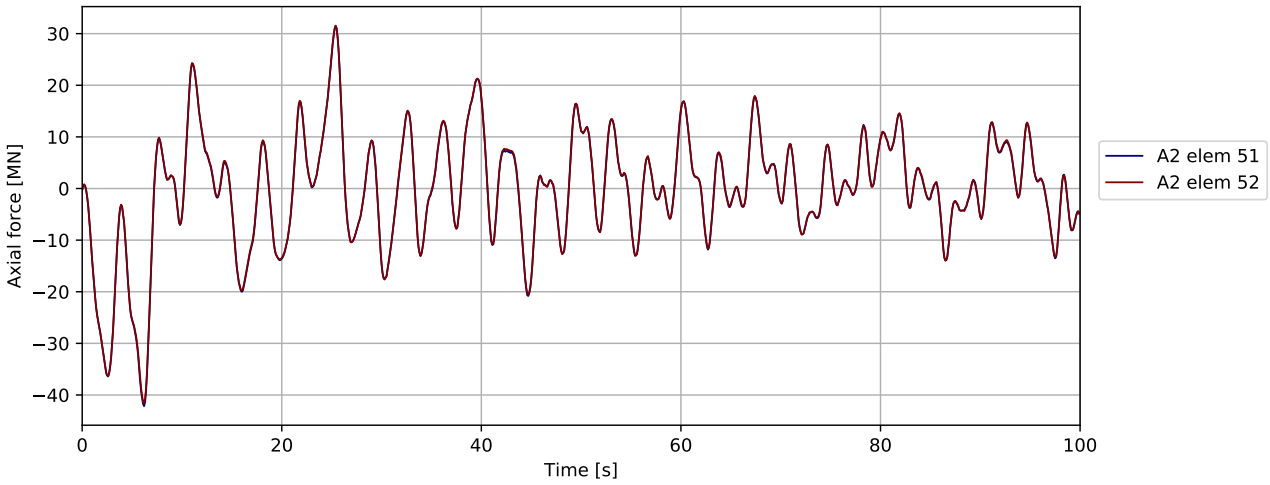

Figure 3.583: P A10 45deg - bridgegirder @ pylon: Axial force [MN]

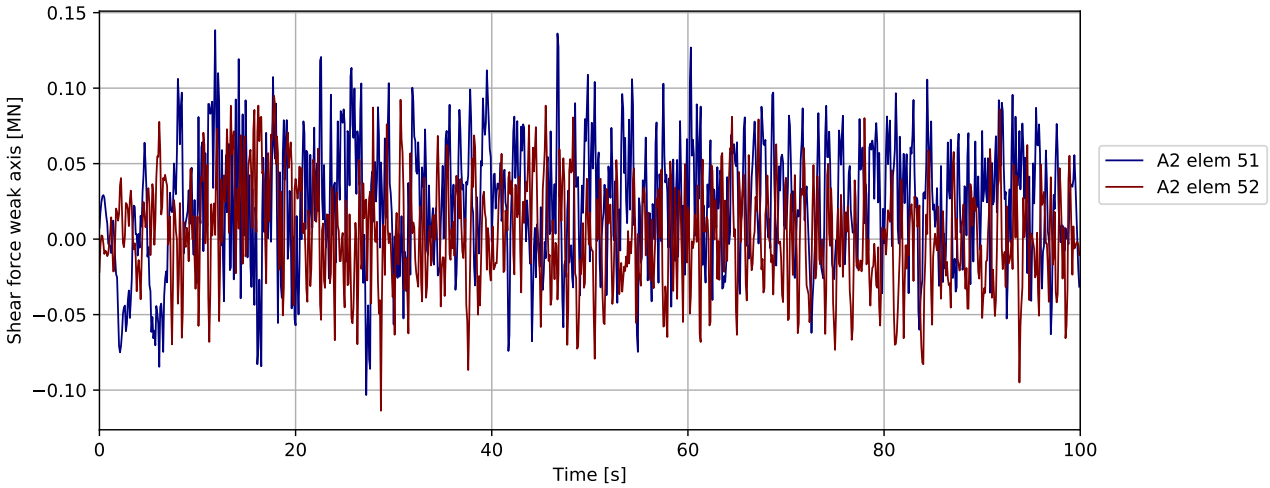

Figure 3.584: P A10 45deg - bridgegirder @ pylon: Shear force weak axis [MN]

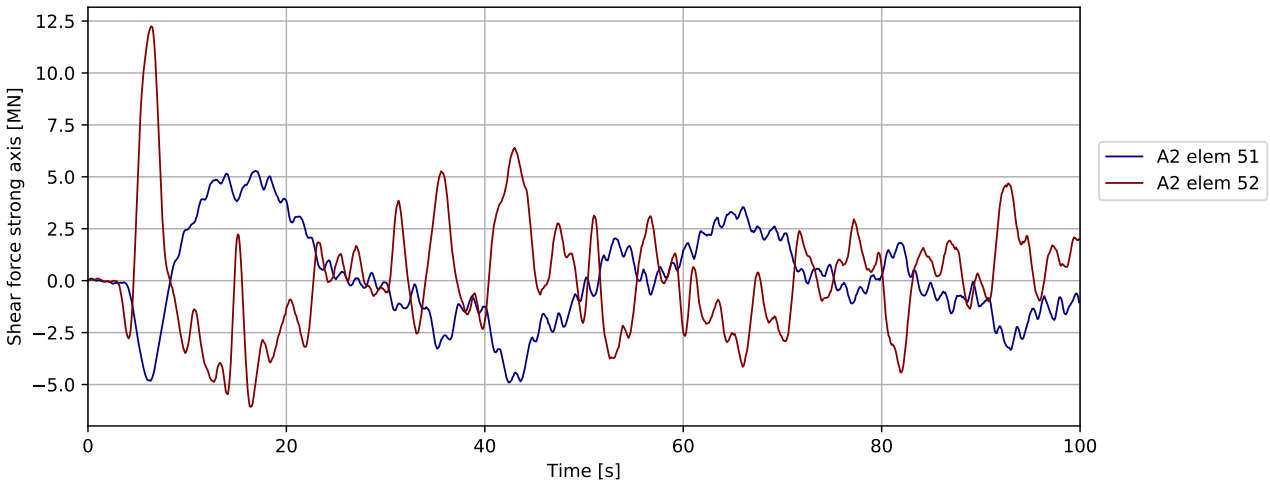

Figure 3.585: P A10 45deg - bridgegirder @ pylon: Shear force strong axis [MN]

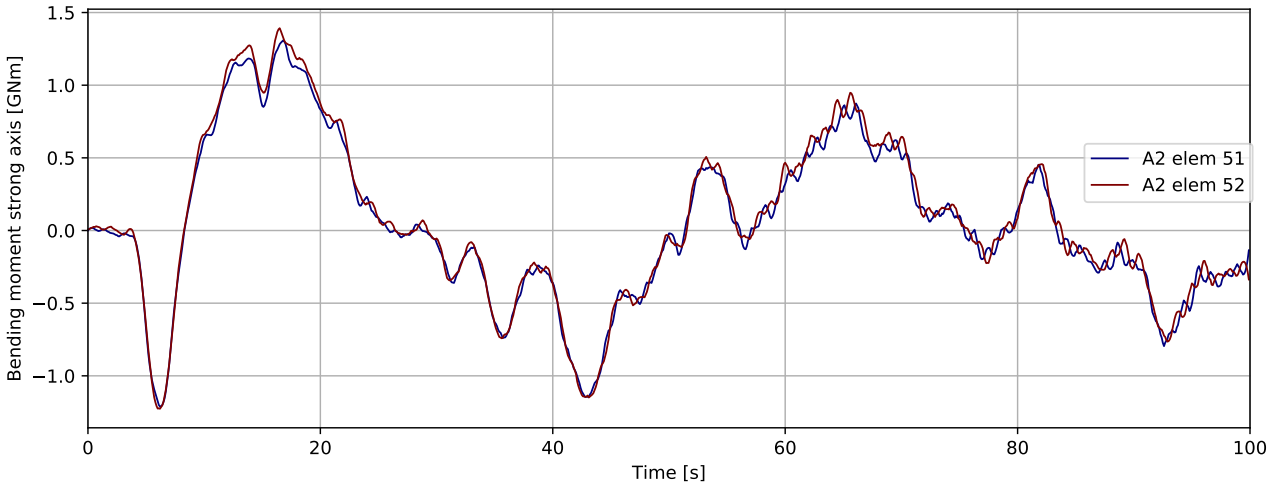

Figure 3.586: P A10 45deg - bridgegirder @ pylon: Bending moment strong axis [GNm]

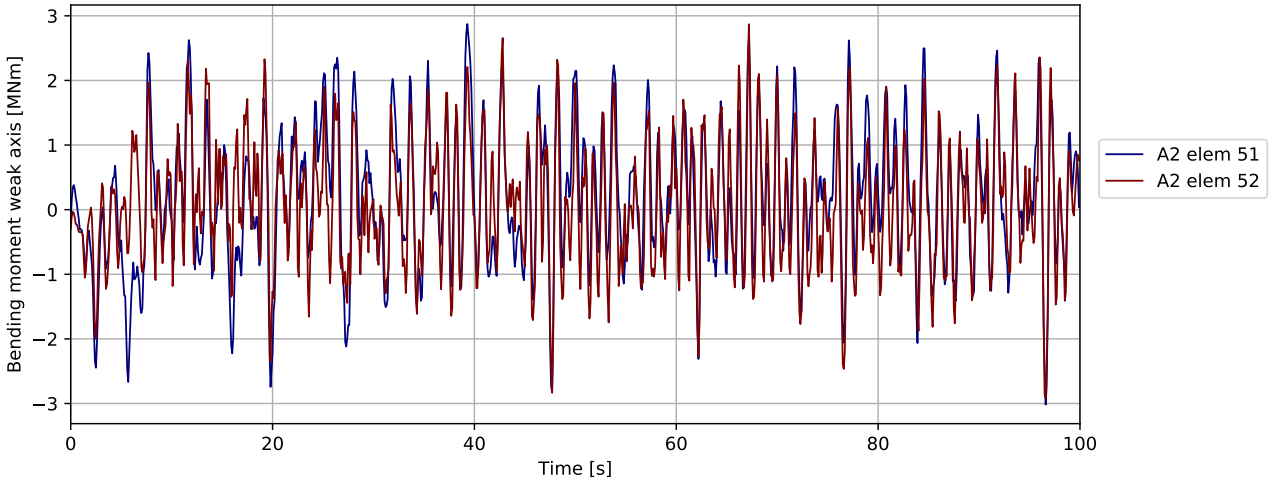

Figure 3.587: P A10 45deg - bridgegirder @ pylon: Bending moment weak axis [MNm]

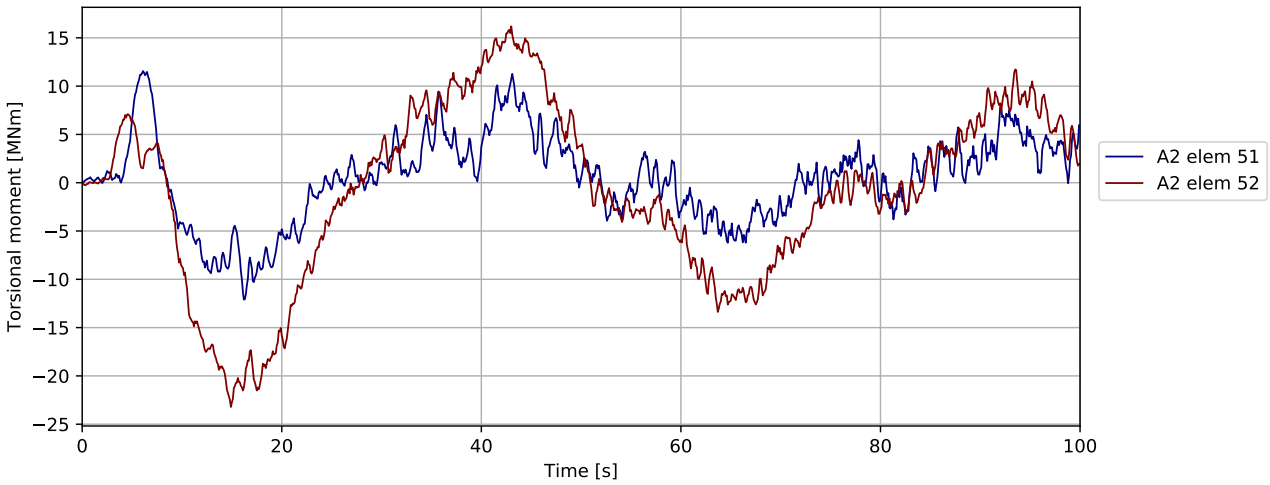

Figure 3.588: P A10 45deg - bridgegirder @ pylon: Torsional moment [MNm]

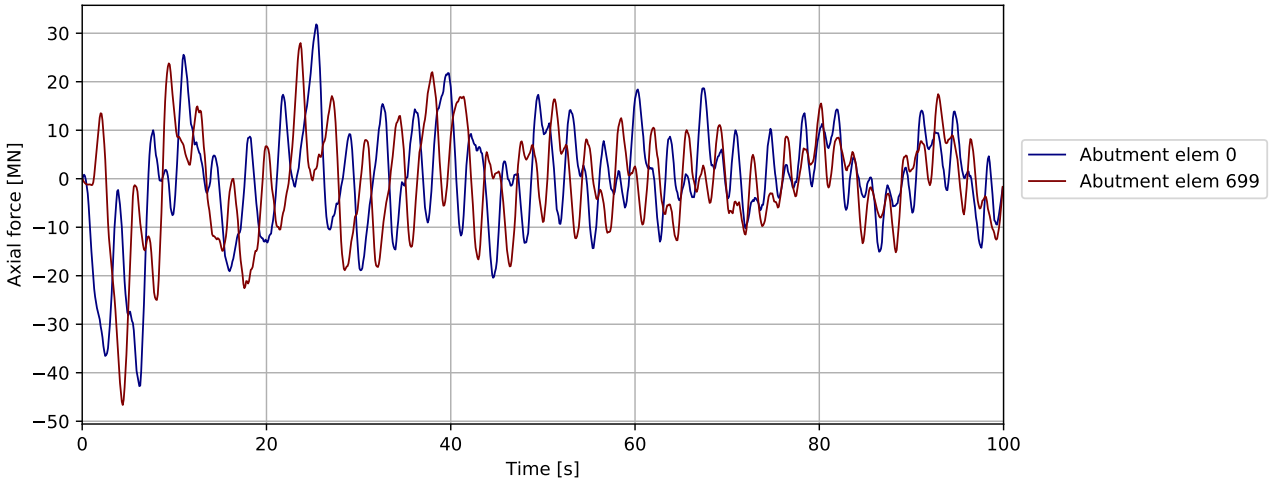

Figure 3.589: P A10 45deg - bridgegirder @abutments: Axial force [MN]

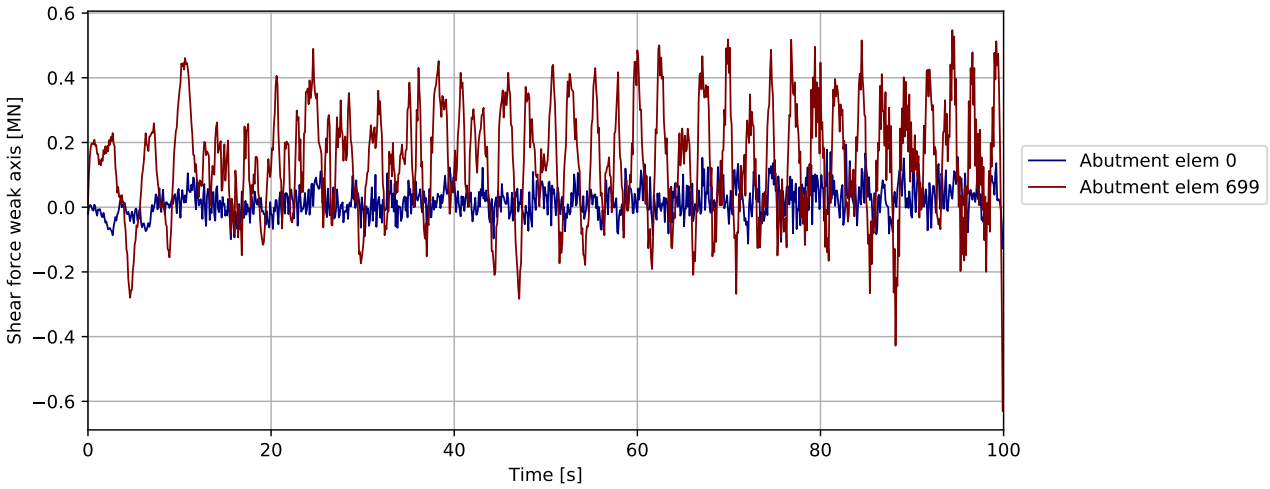

Figure 3.590: P A10 45deg - bridgegirder @abutments: Shear force weak axis [MN]

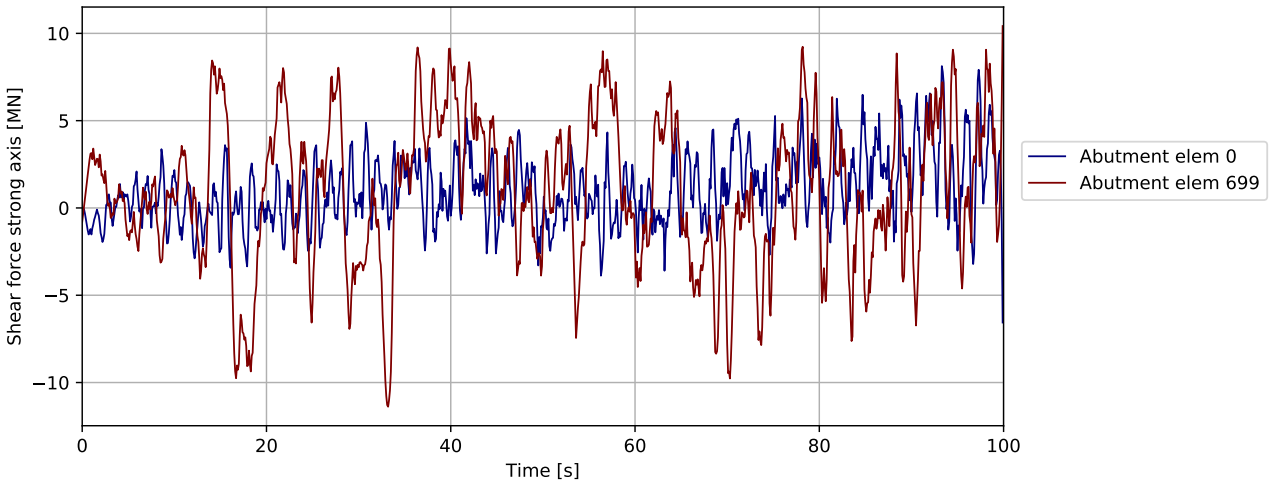

Figure 3.591: P A10 45deg - bridgegirder @abutments: Shear force strong axis [MN]

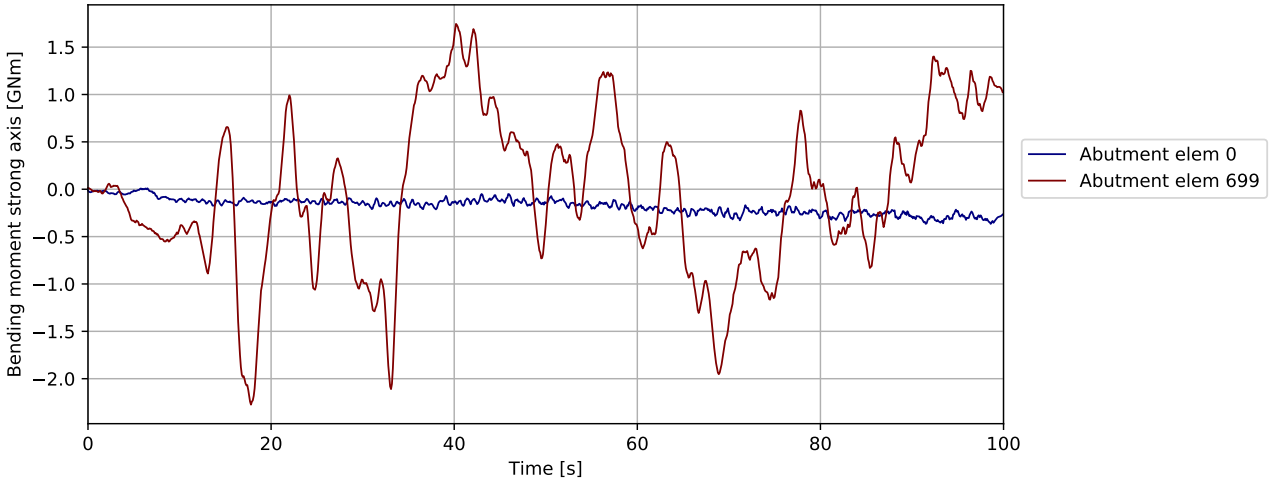

Figure 3.592: P A10 45deg - bridgegirder @abutments: Bending moment strong axis [GNm]

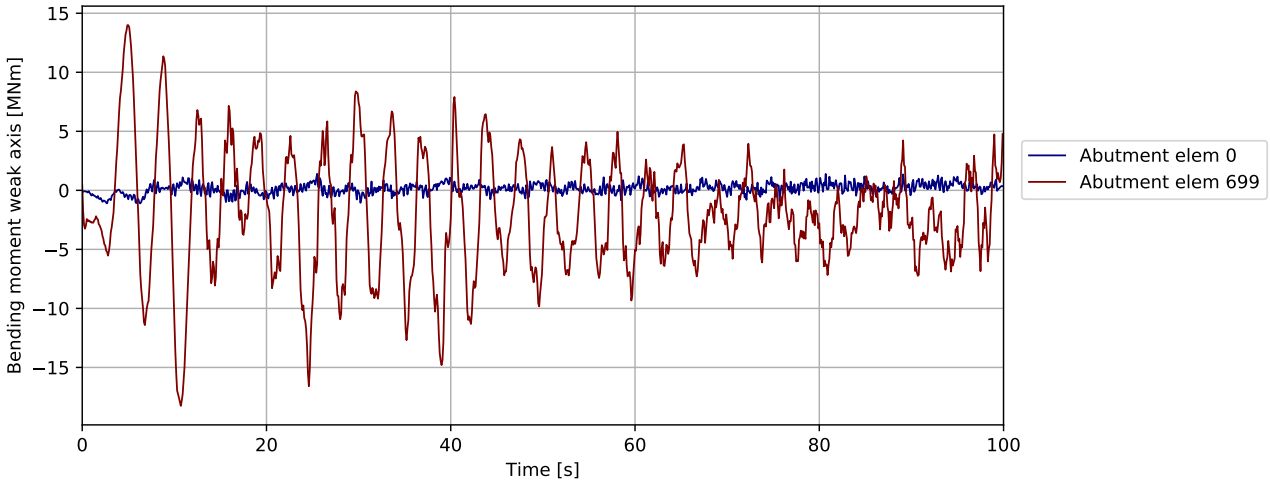

Figure 3.593: P A10 45deg - bridgegirder @abutments: Bending moment weak axis [MNm]

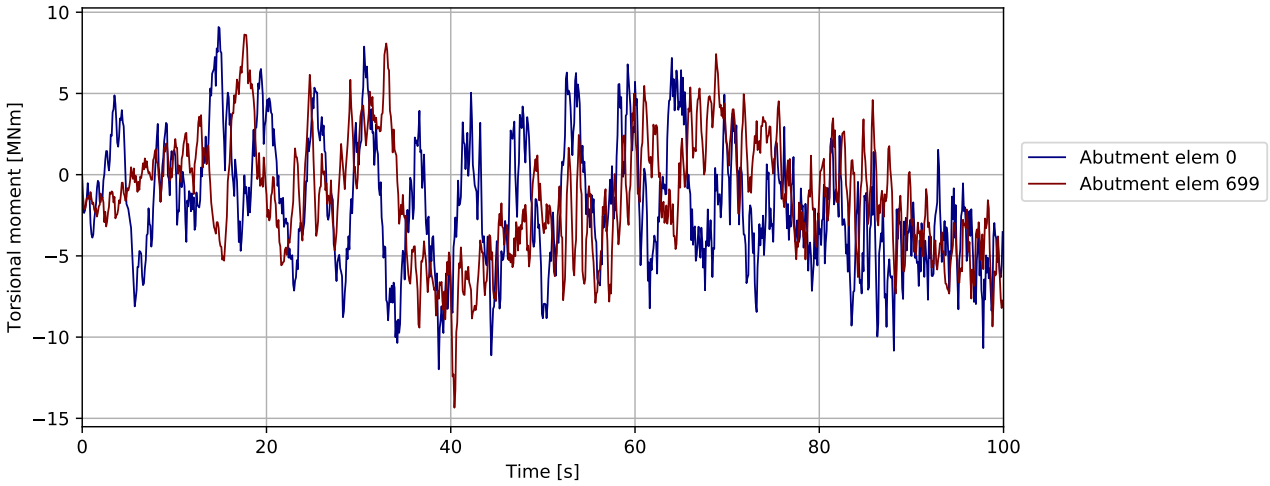

Figure 3.594: P A10 45deg - bridgegirder @abutments: Torsional moment [MNm]

Note : Compressive spring force is negative

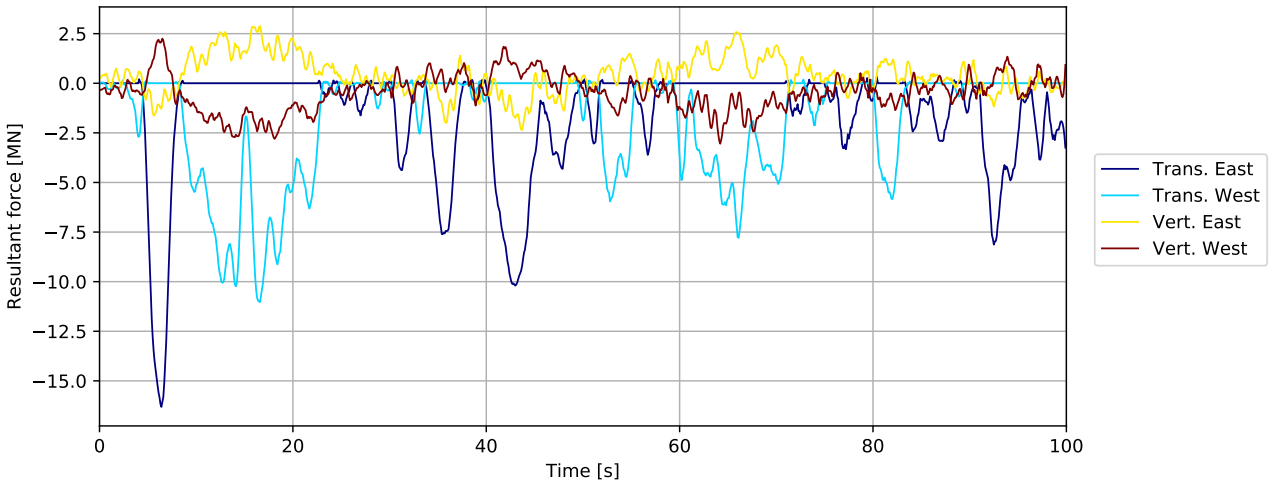

Figure 3.595: P A10 45deg - bridgegirder supports in tower: Resultant force [MN]

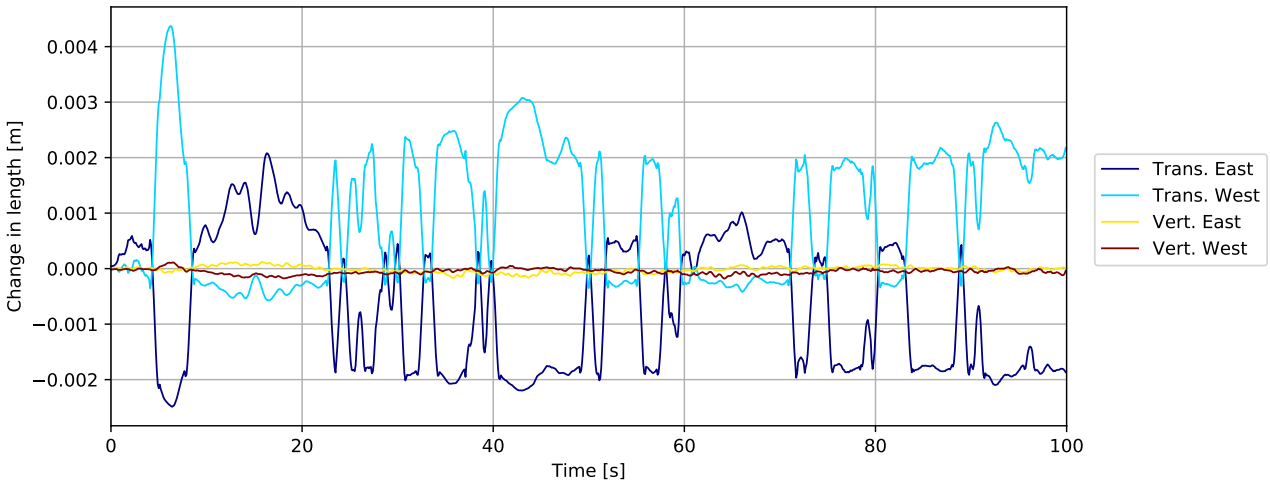

Figure 3.596: P A10 45deg - bridgegirder supports in tower: Change in length [m]

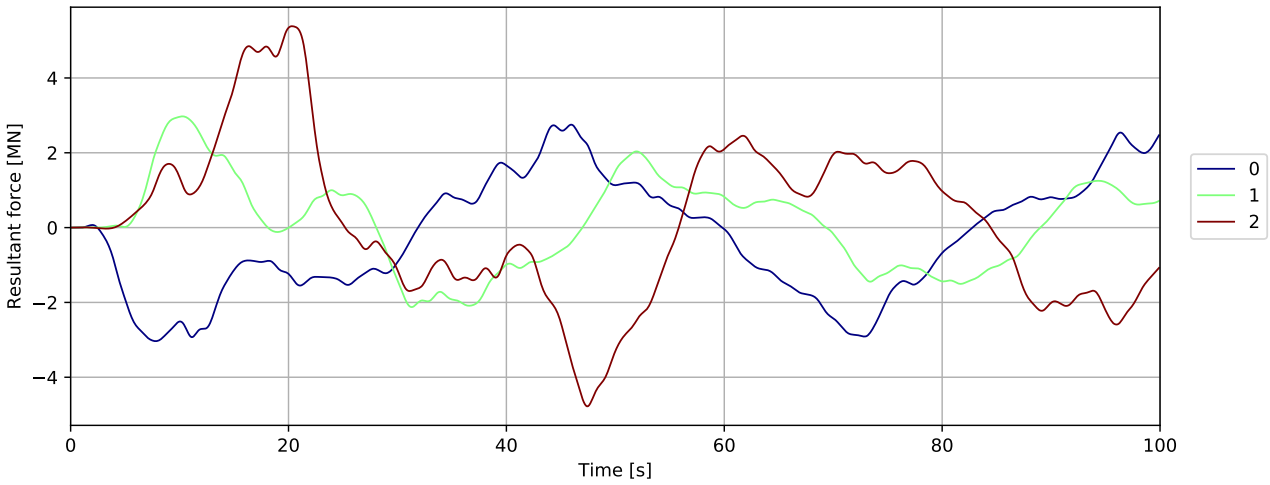

Figure 3.597: Mooring force

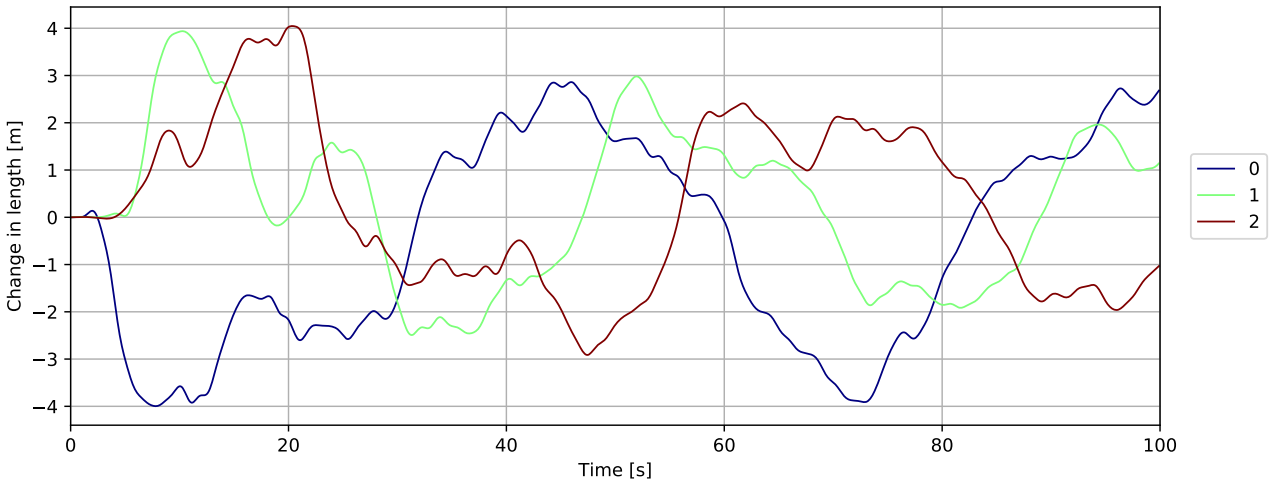

Figure 3.598: Mooring displacement

3.14 PontoonA20 45deg

3.14.1 Overall response

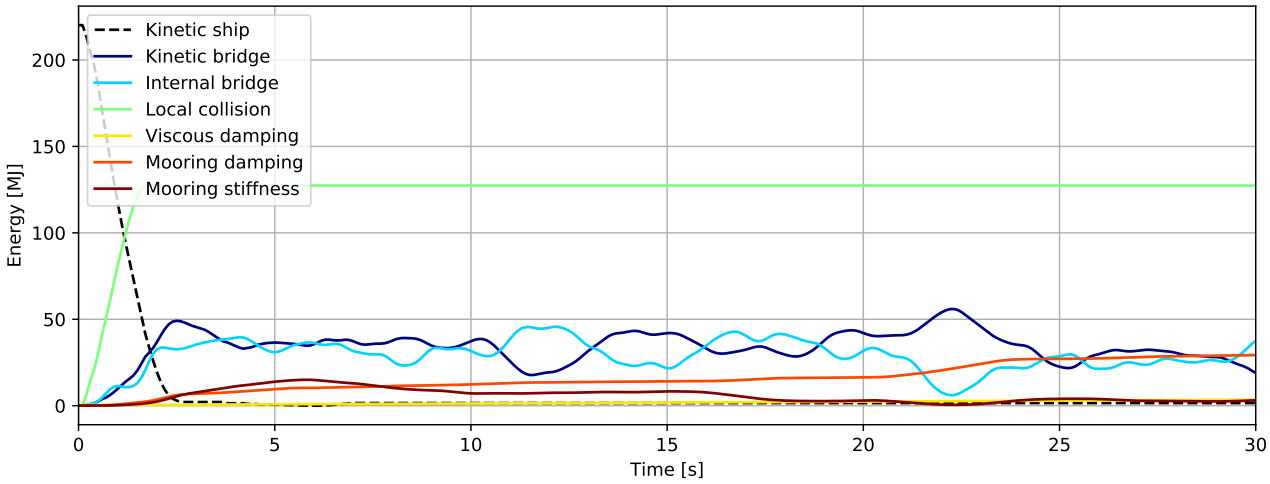

Figure 3.599: Energy [MJ] - initial phase

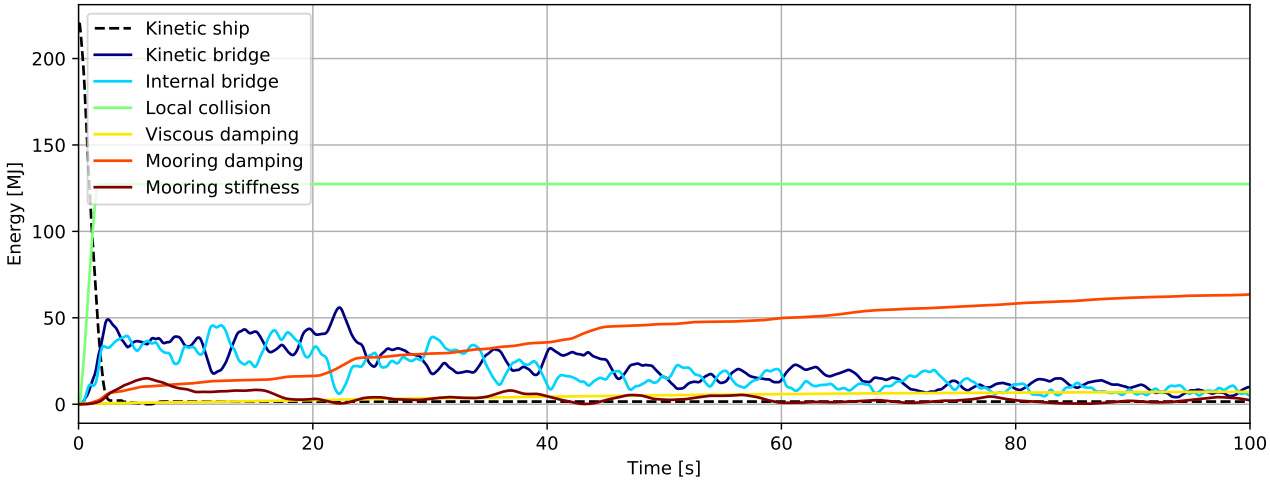

Figure 3.600: Energy [MJ]

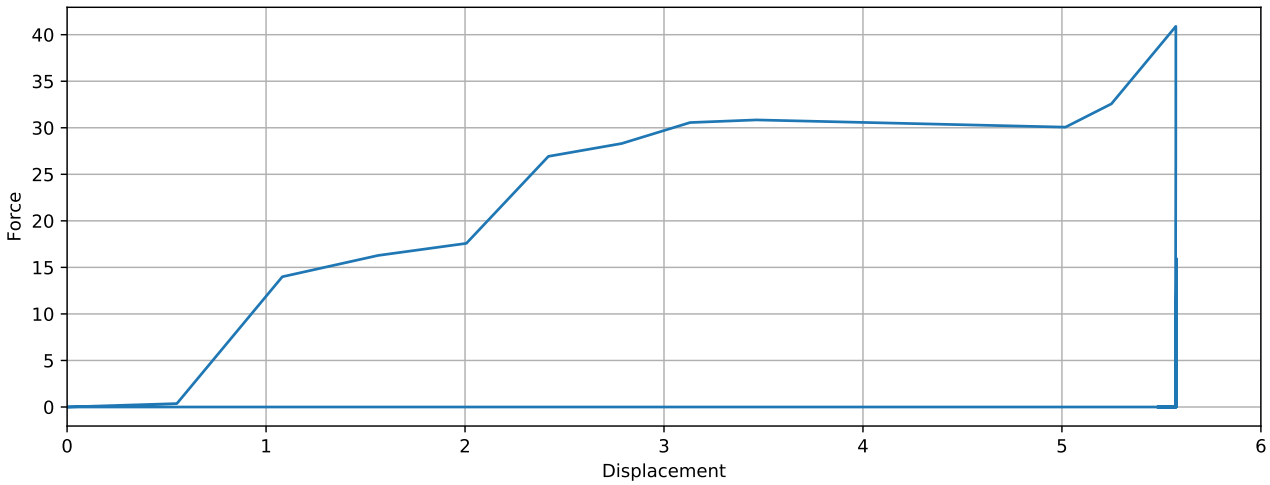

Figure 3.601: Simulated local collision force-displacement

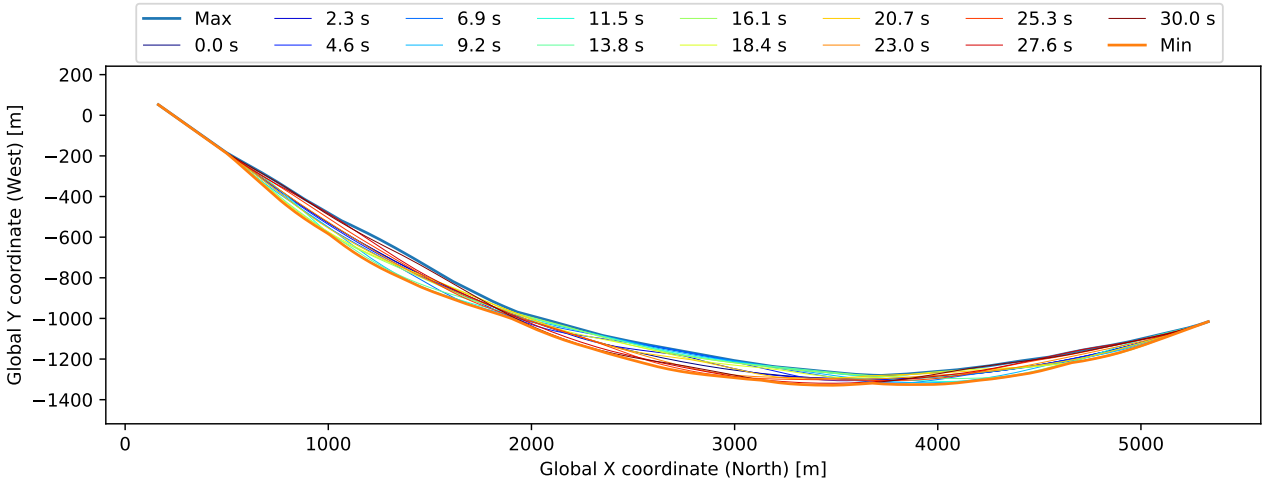

Figure 3.602: Bridgegirder deflection (10x displacment scaling)

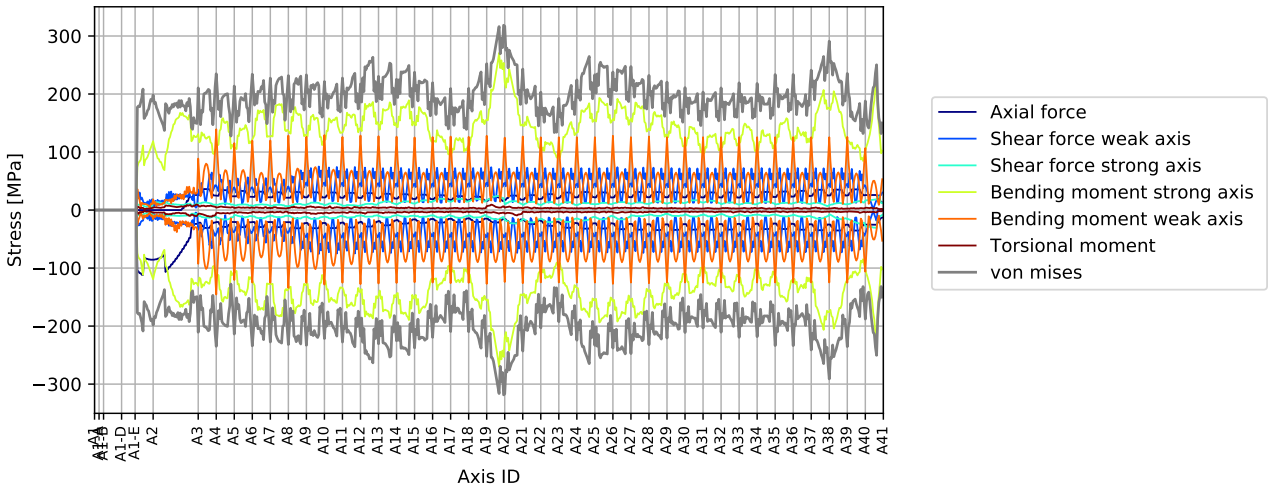

Figure 3.603: Stress envelope from all force components

3.14.2 Envelope plots

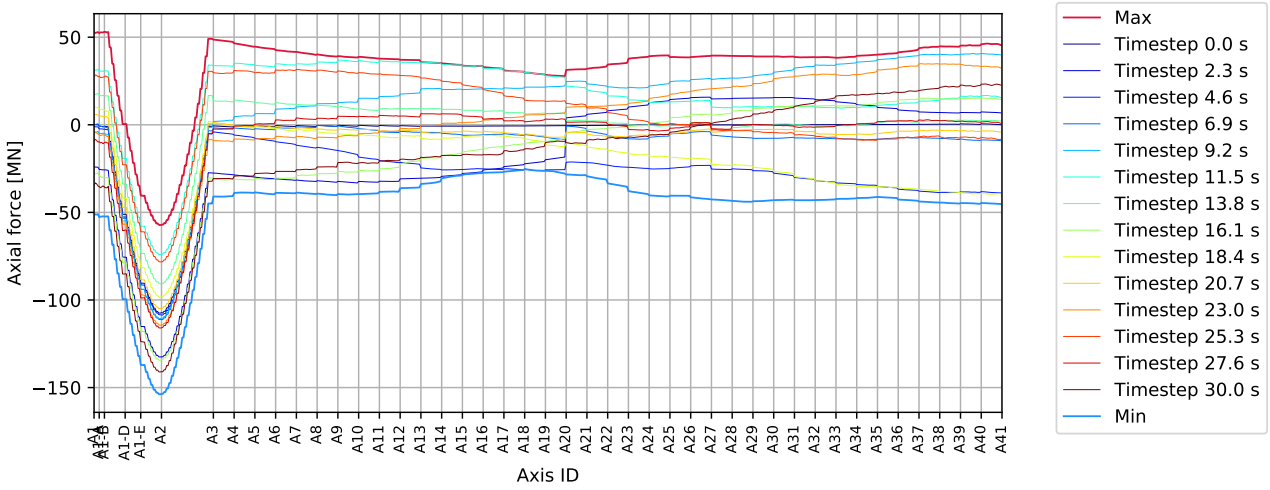

Figure 3.604: P A20 45deg - bridgegirder : Axial force [MN]

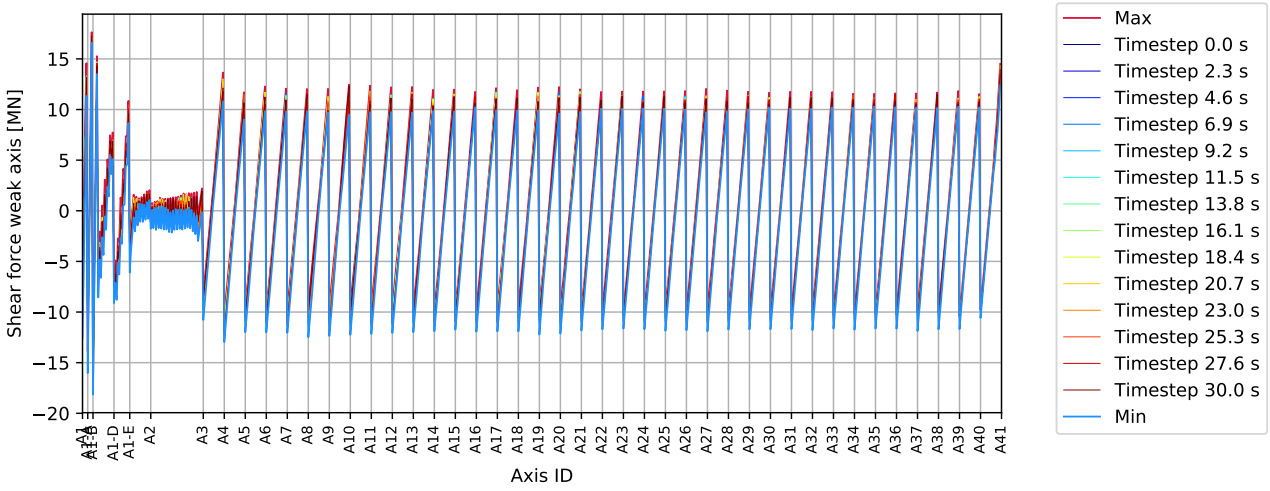

Figure 3.605: P A20 45deg - bridgegirder : Shear force weak axis [MN]

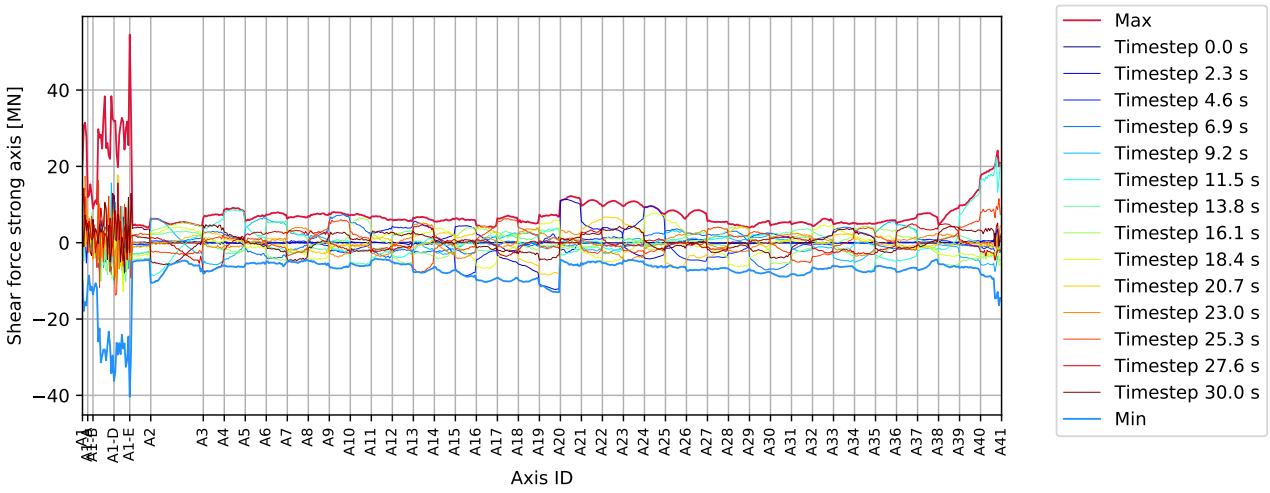

Figure 3.606: P A20 45deg - bridgegirder : Shear force strong axis [MN]

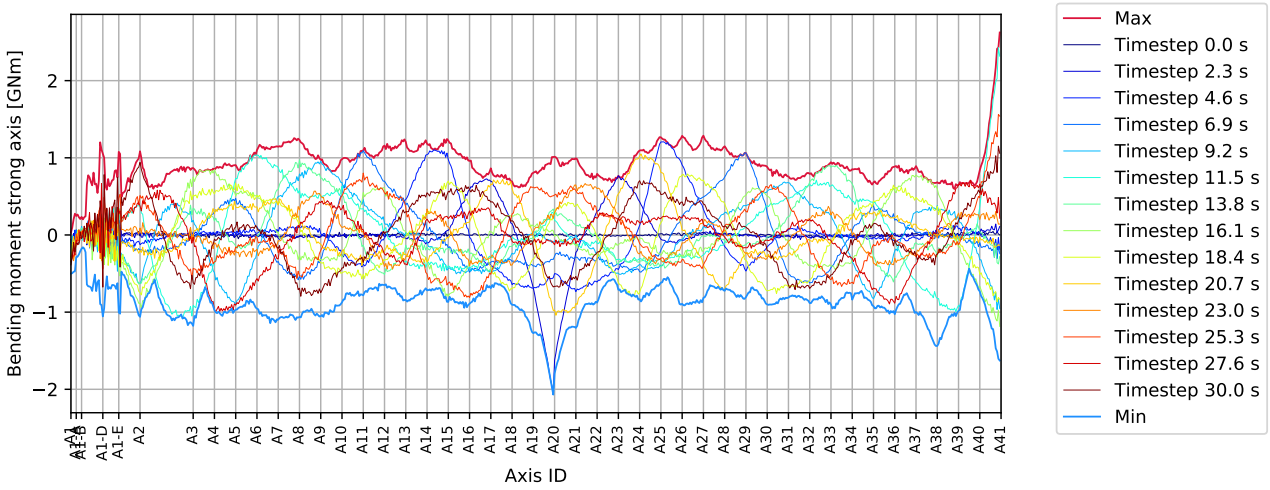

Figure 3.607: P A20 45deg - bridgegirder : Bending moment strong axis [GNm]

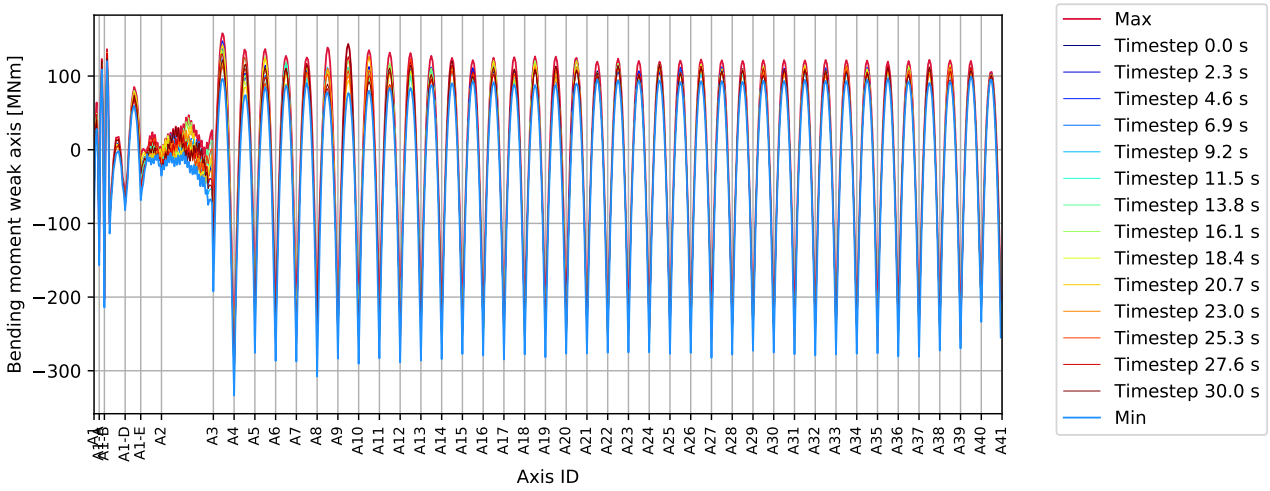

Figure 3.608: P A20 45deg - bridgegirder : Bending moment weak axis [MNm]

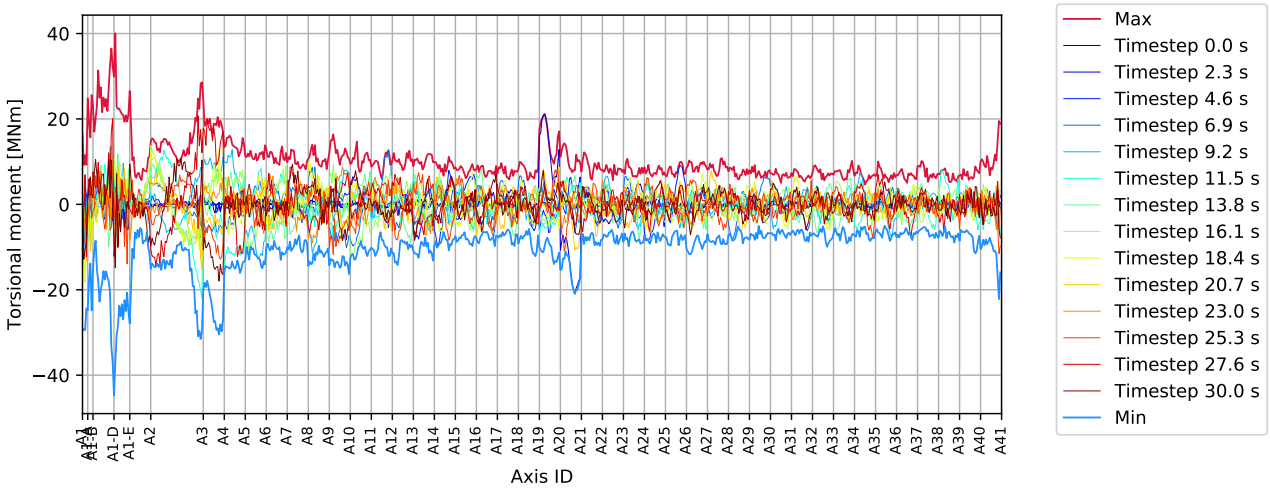

Figure 3.609: P A20 45deg - bridgegirder : Torsional moment [MNm]

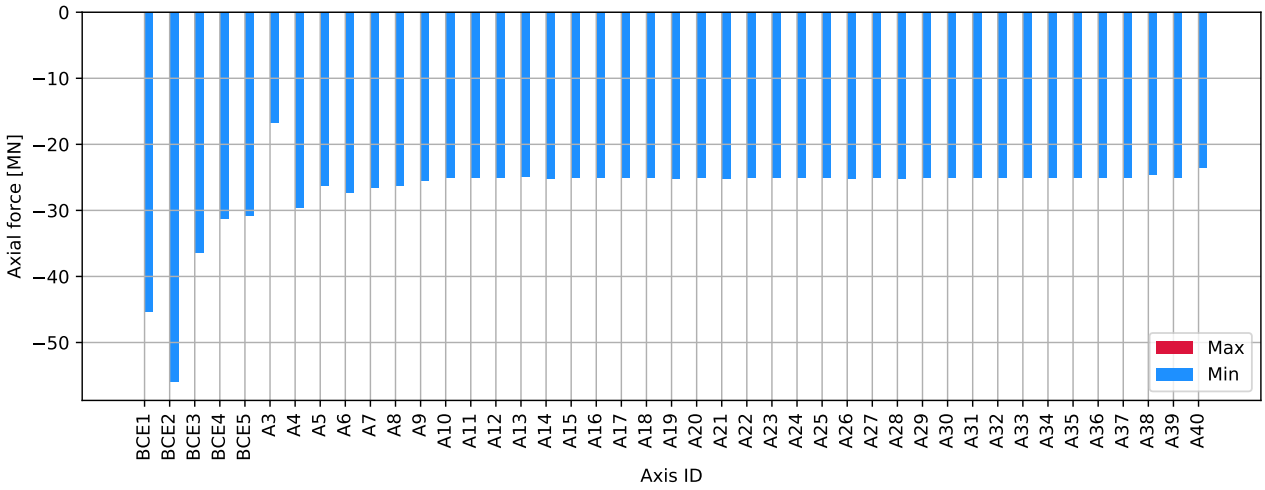

Figure 3.610: P A20 45deg - columns bottom : Axial force [MN]

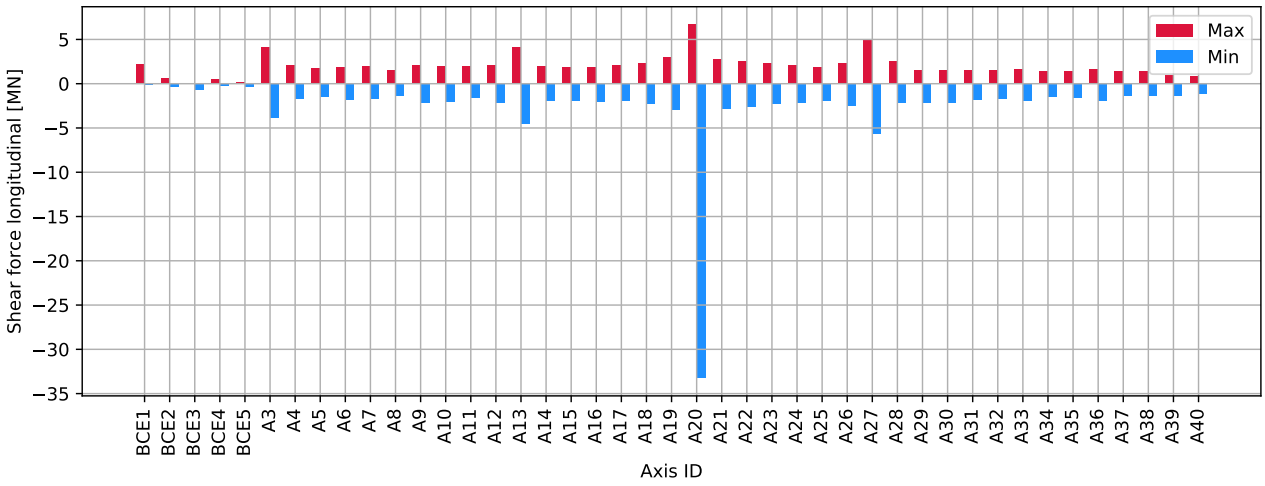

Figure 3.611: P A20 45deg - columns bottom : Shear force longitudinal [MN]

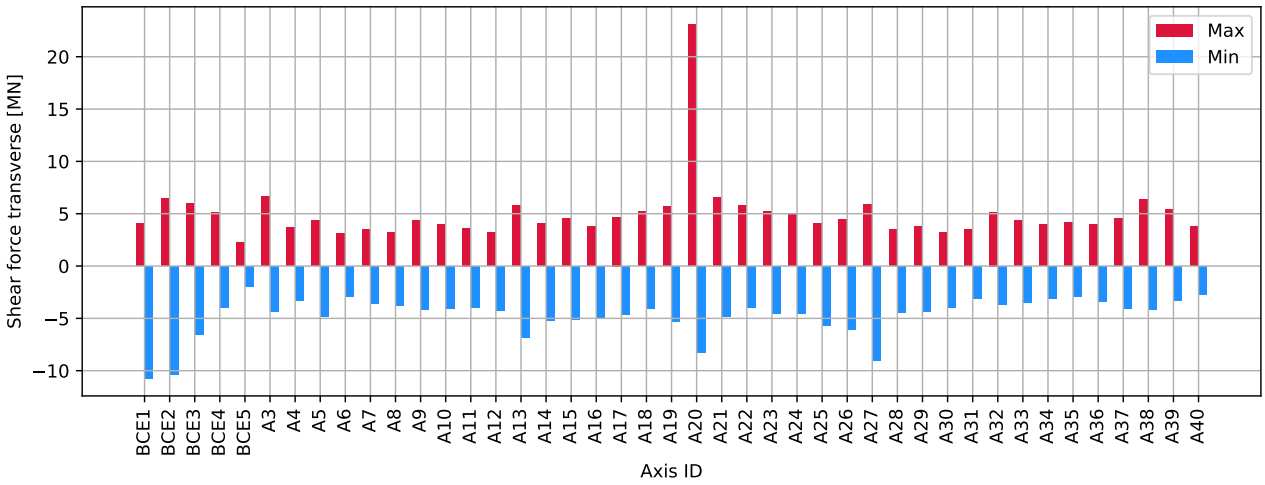

Figure 3.612: P A20 45deg - columns bottom : Shear force transverse [MN]

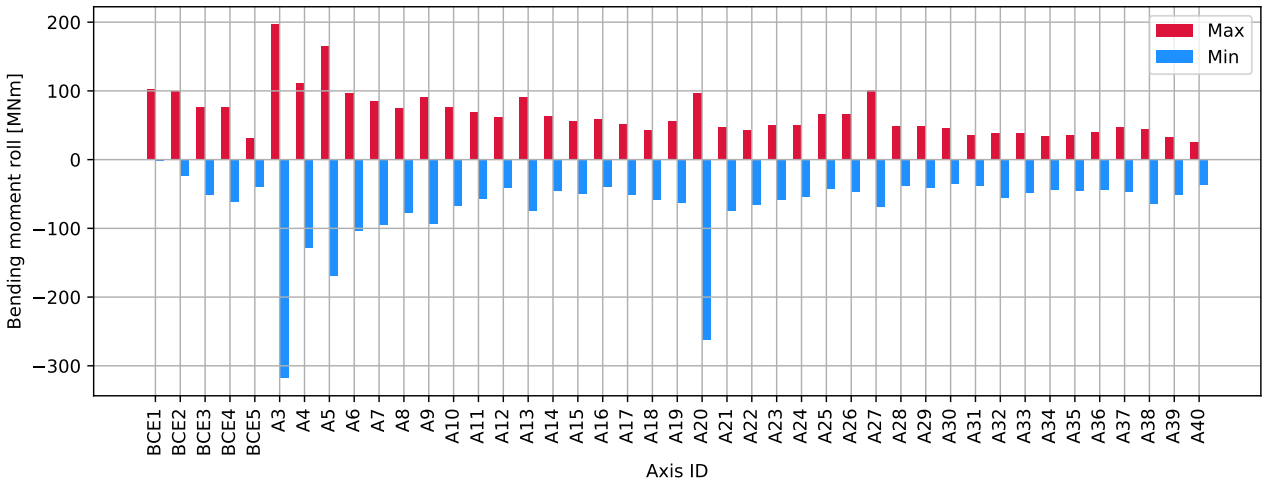

Figure 3.613: P A20 45deg - columns bottom : Bending moment roll [MNm]

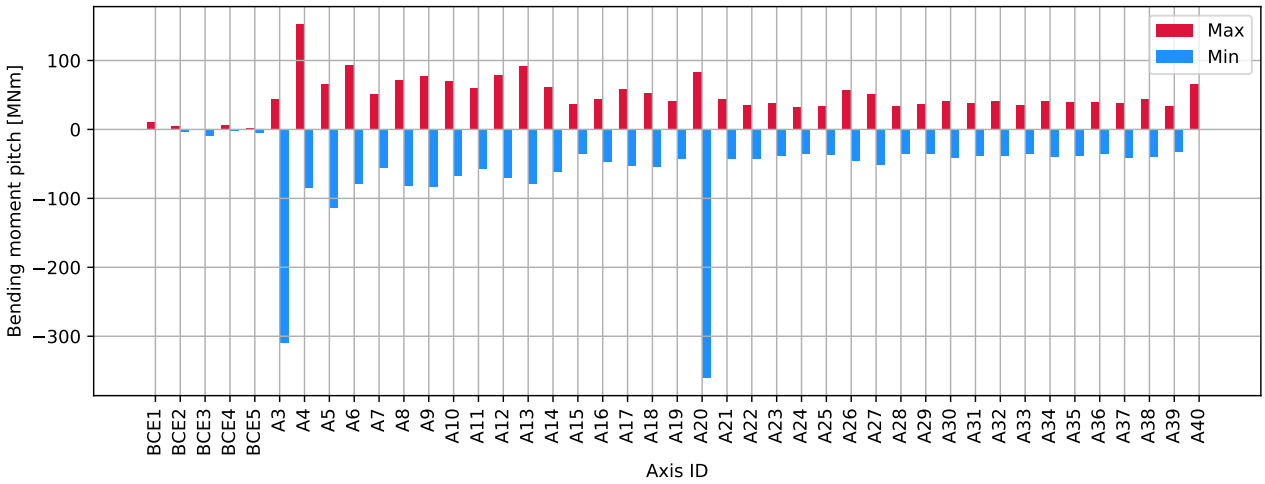

Figure 3.614: P A20 45deg - columns bottom : Bending moment pitch [MNm]

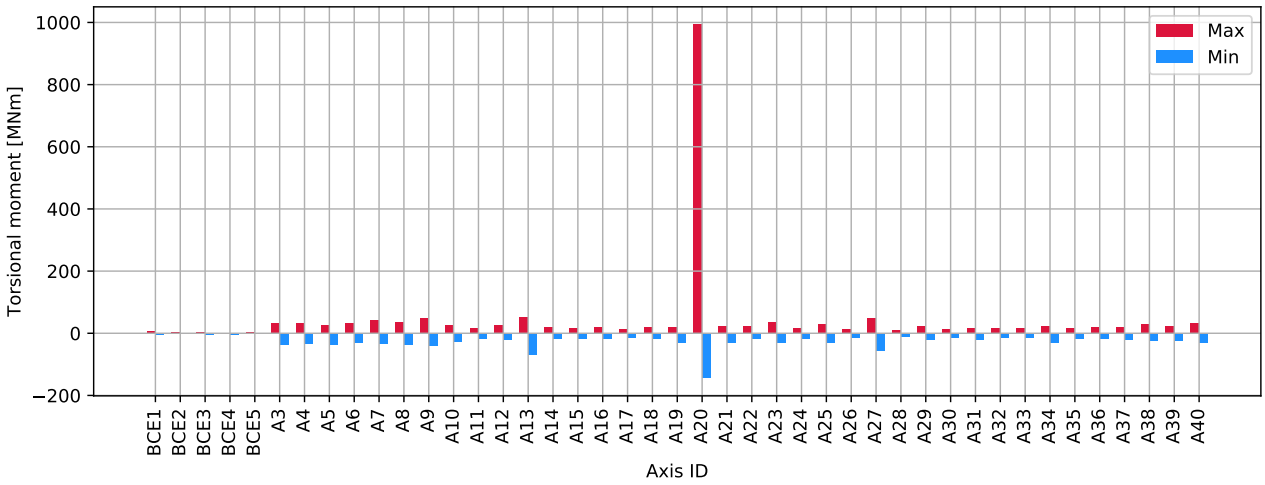

Figure 3.615: P A20 45deg - columns bottom : Torsional moment [MNm]

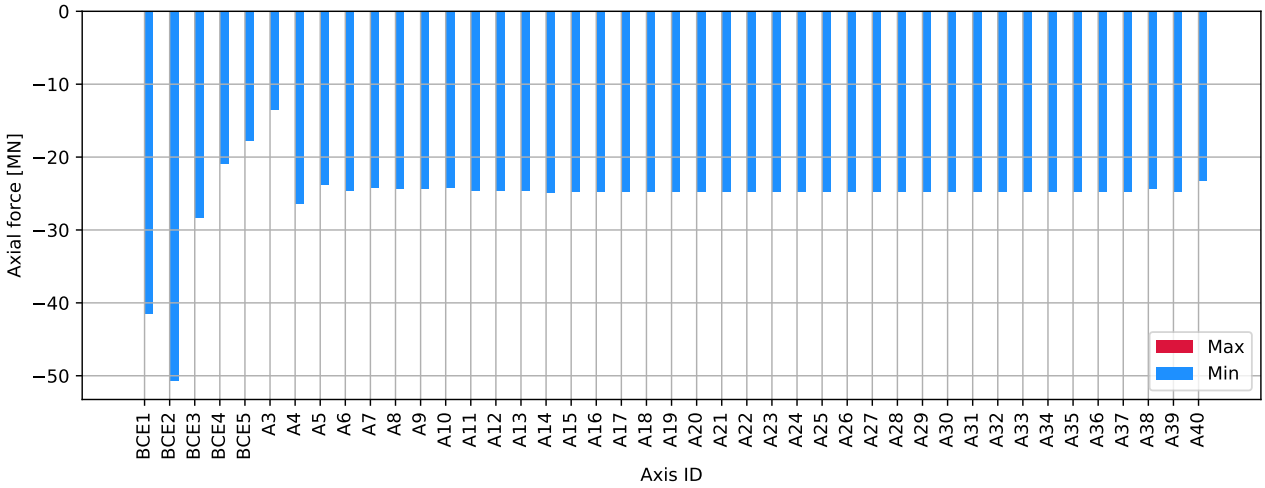

Figure 3.616: P A20 45deg - columns top : Axial force [MN]

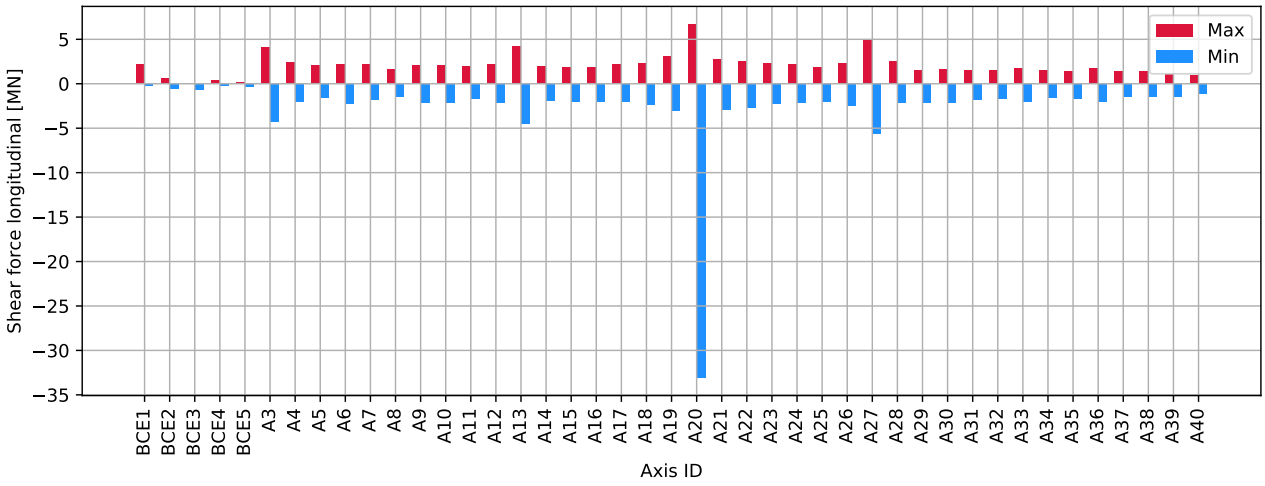

Figure 3.617: P A20 45deg - columns top : Shear force longitudinal [MN]

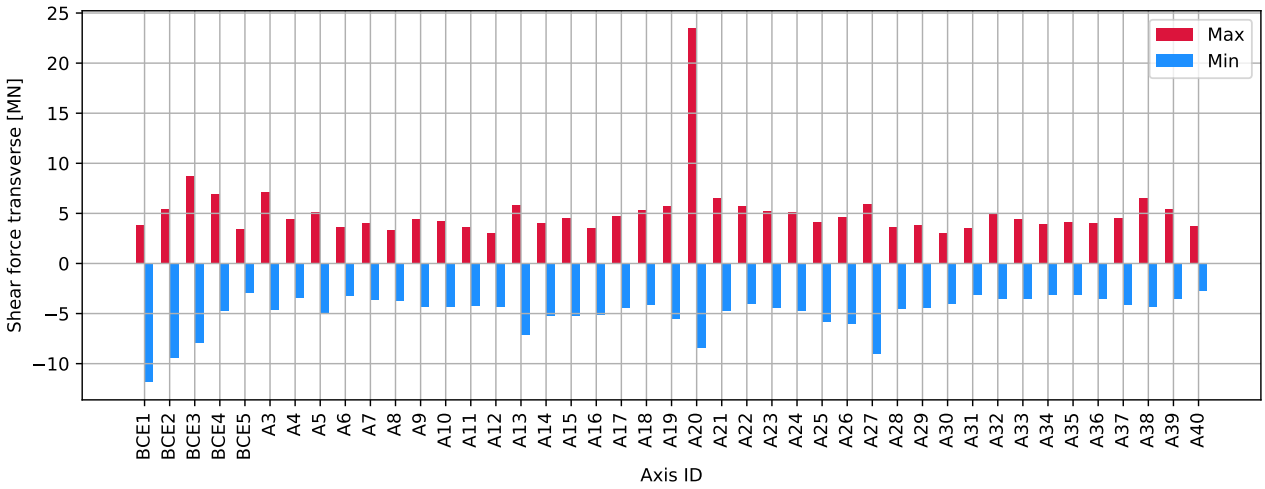

Figure 3.618: P A20 45deg - columns top : Shear force transverse [MN]

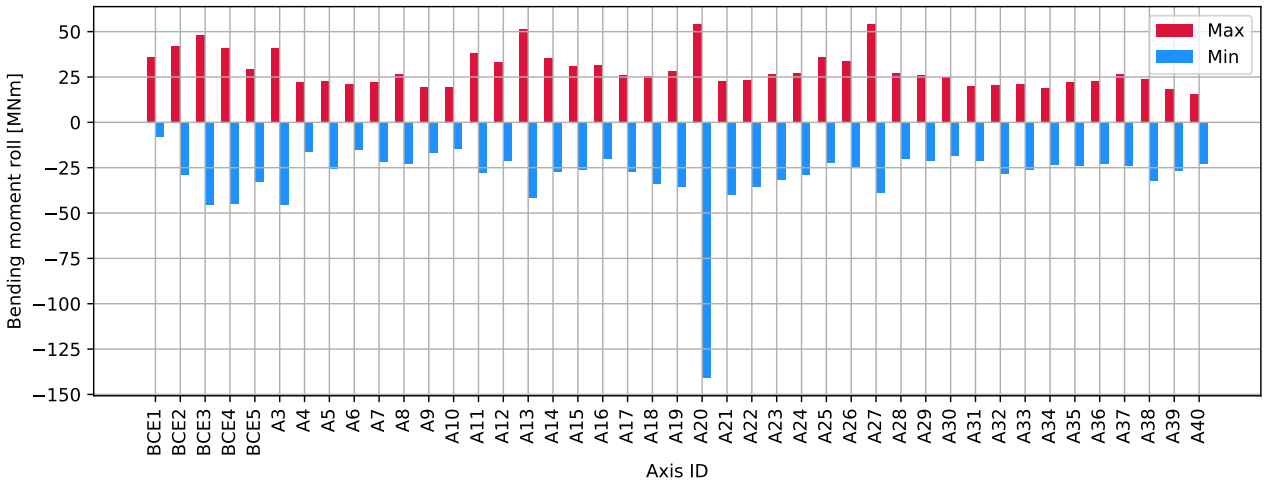

Figure 3.619: P A20 45deg - columns top : Bending moment roll [MNm]

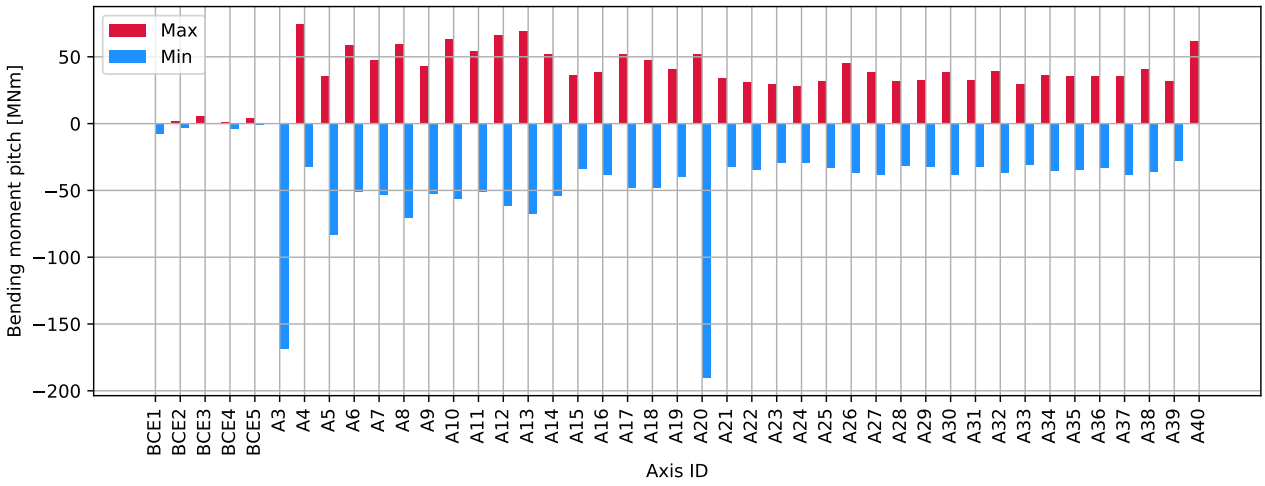

Figure 3.620: P A20 45deg - columns top : Bending moment pitch [MNm]

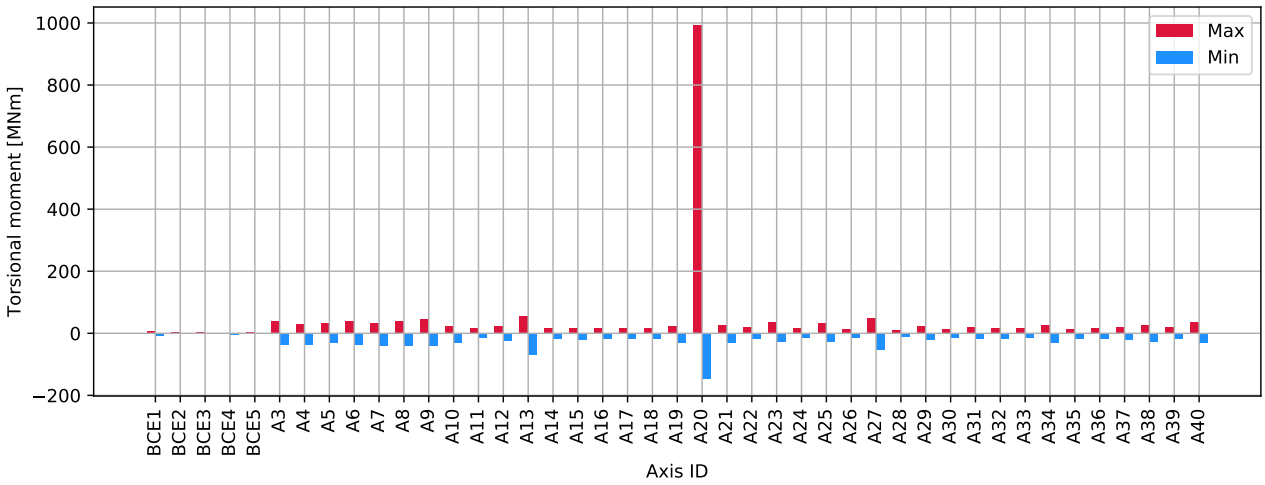

Figure 3.621: P A20 45deg - columns top : Torsional moment [MNm]

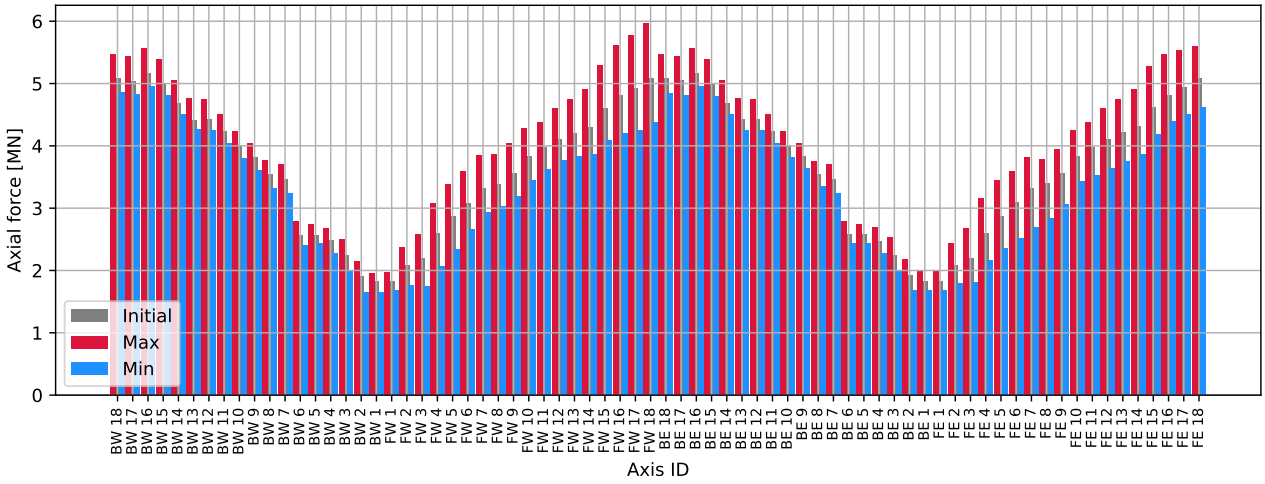

Figure 3.622: P A20 45deg - cables : Axial force [MN]

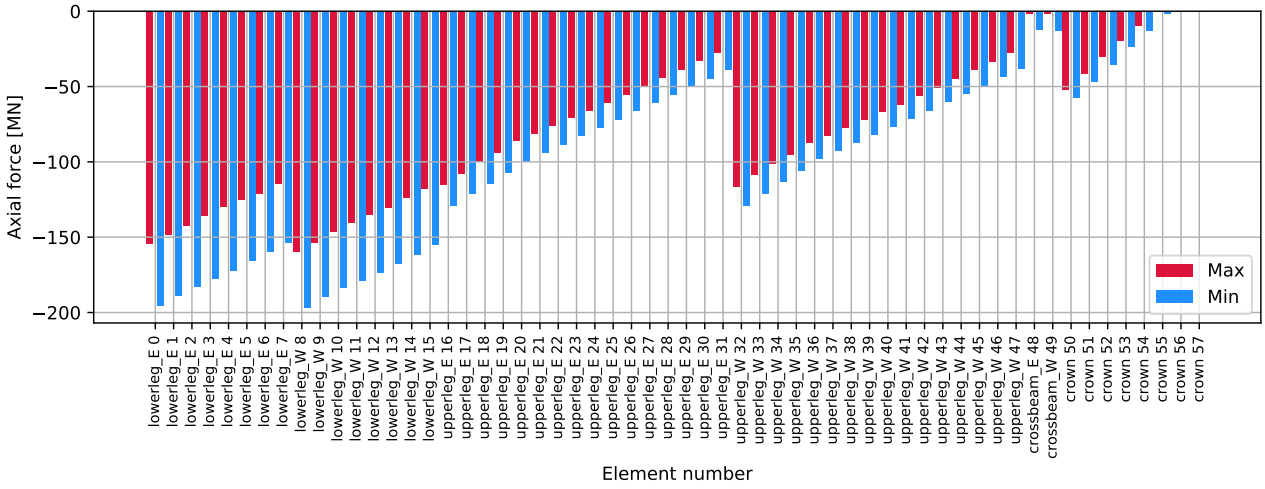

Figure 3.623: P A20 45deg - tower: Axial force [MN]

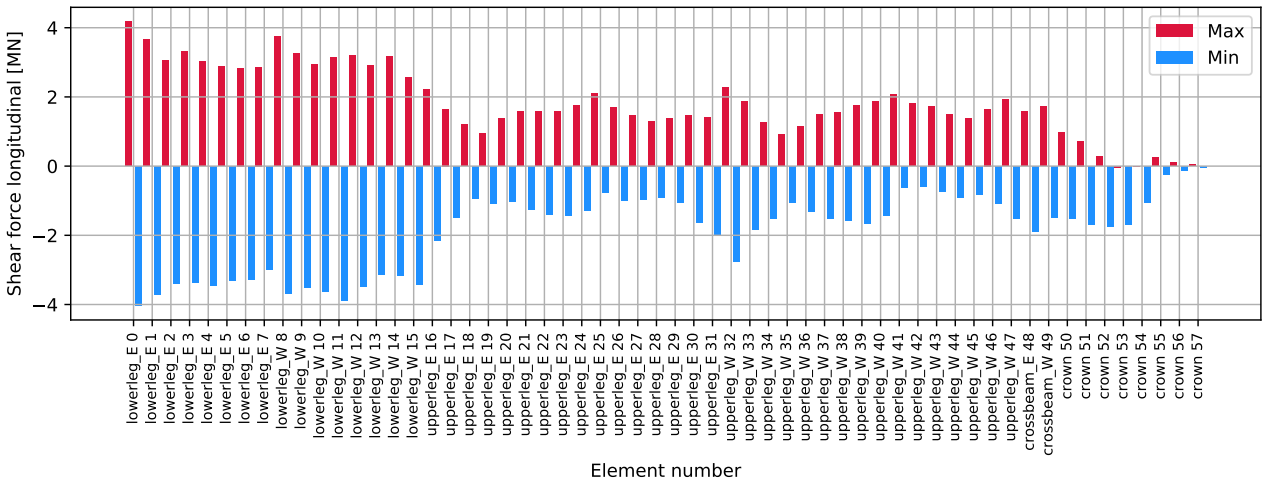

Figure 3.624: P A20 45deg - tower: Shear force longitudinal [MN]

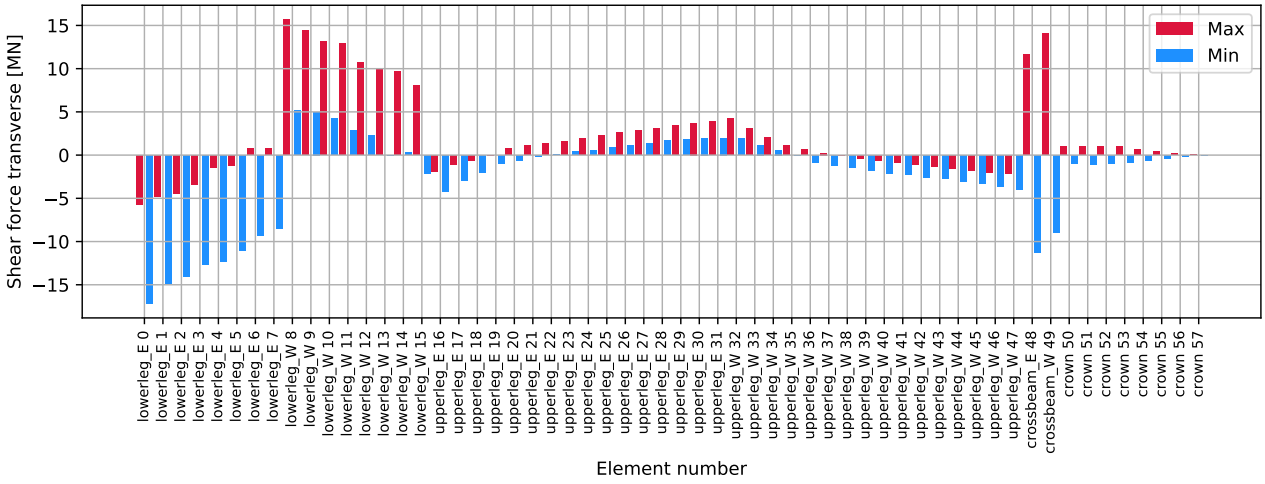

Figure 3.625: P A20 45deg - tower: Shear force transverse [MN]

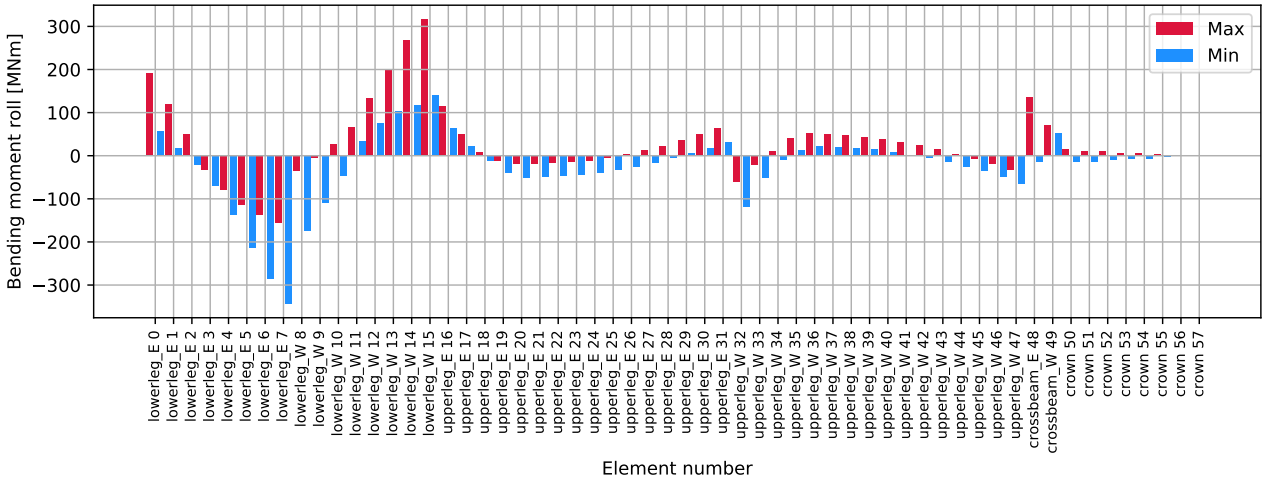

Figure 3.626: P A20 45deg - tower: Bending moment roll [MNm]

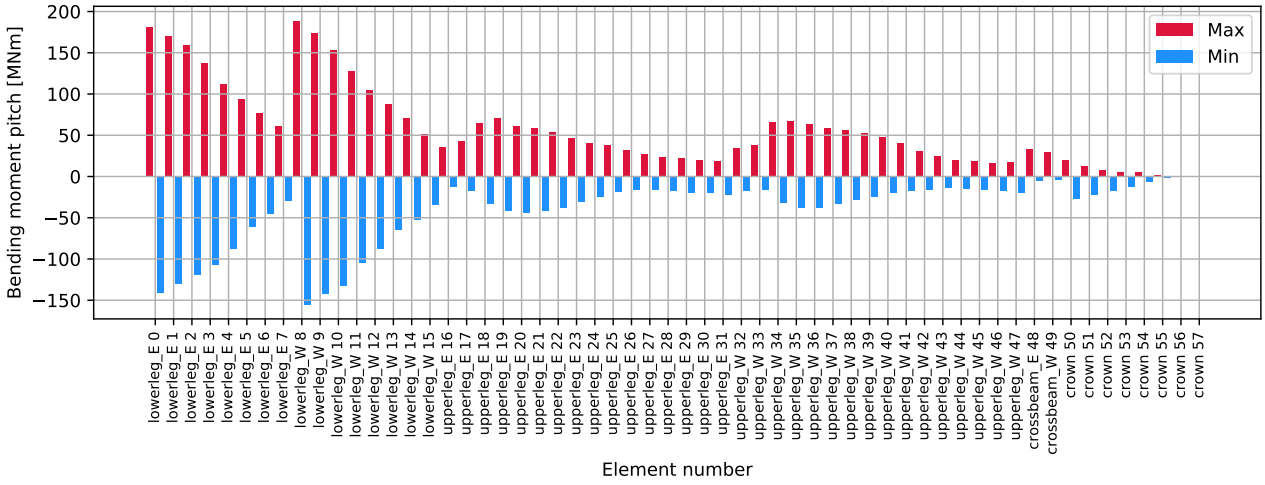

Figure 3.627: P A20 45deg - tower: Bending moment pitch [MNm]

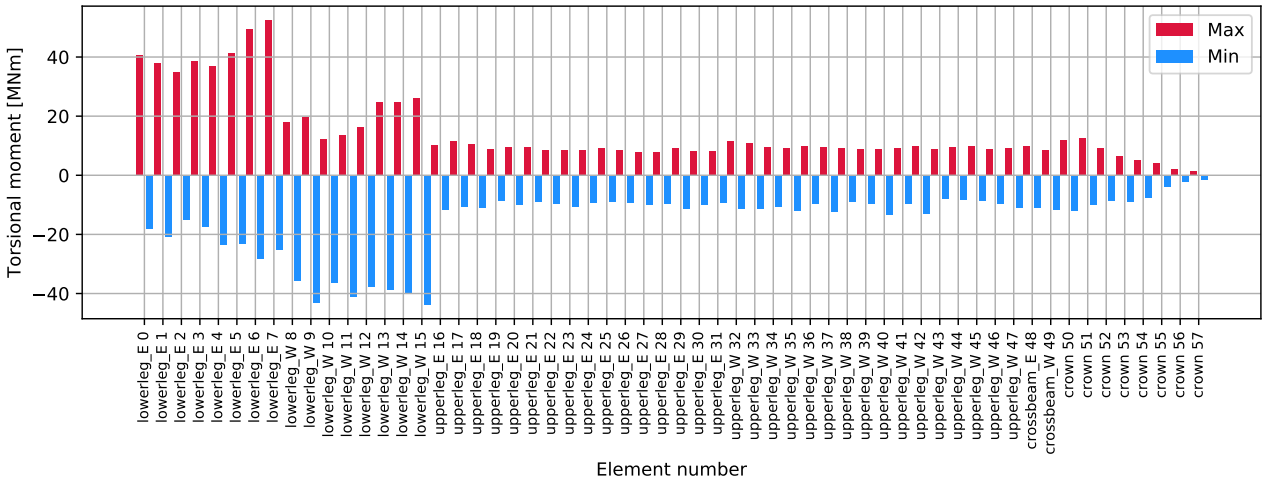

Figure 3.628: P A20 45deg - tower: Torsional moment [MNm]

3.14.3 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

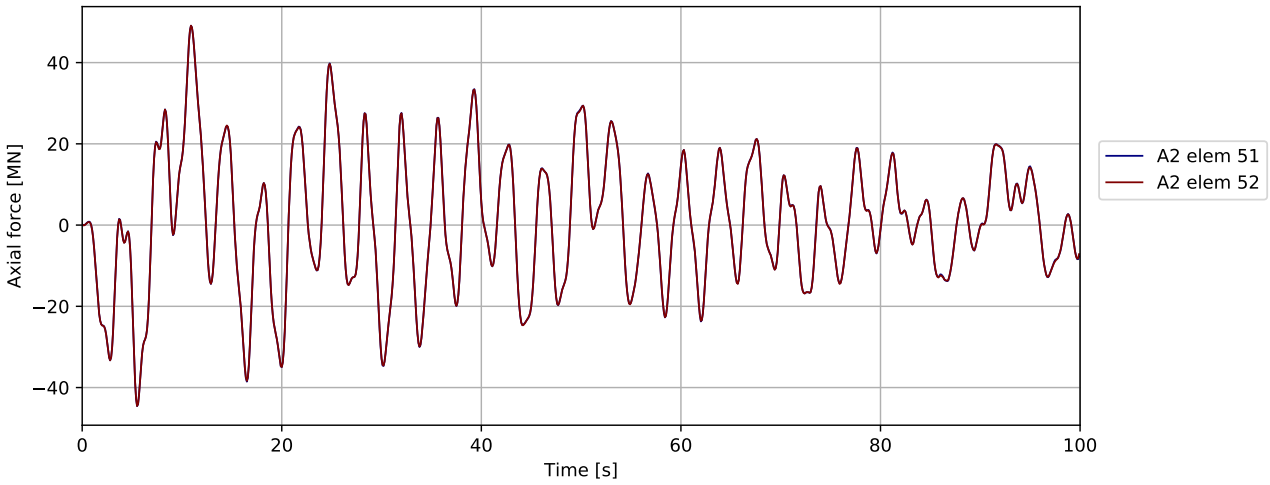

Figure 3.629: P A20 45deg - bridgegirder @ pylon: Axial force [MN]

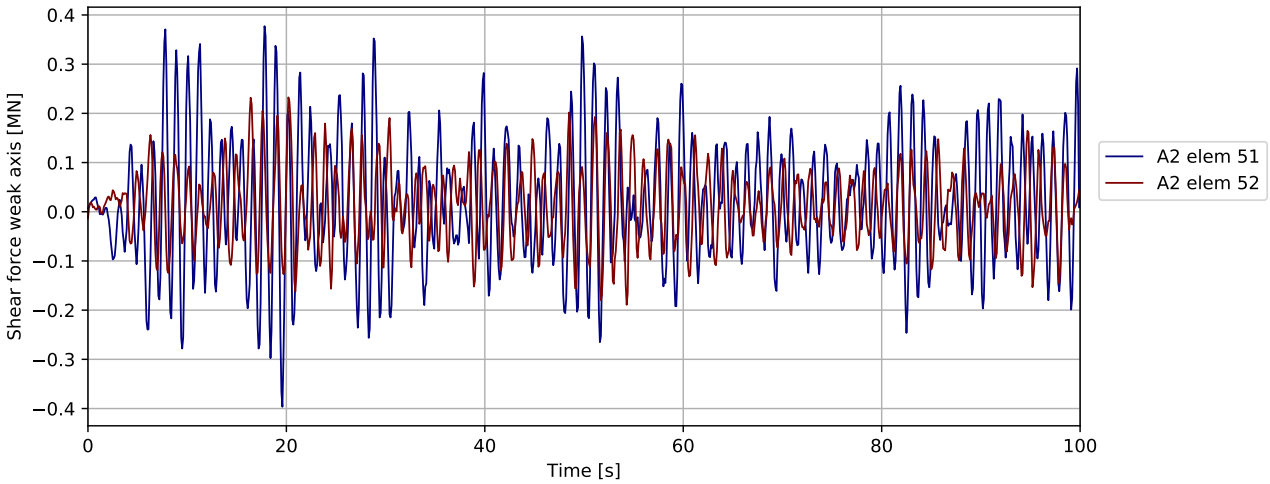

Figure 3.630: P A20 45deg - bridgegirder @ pylon: Shear force weak axis [MN]

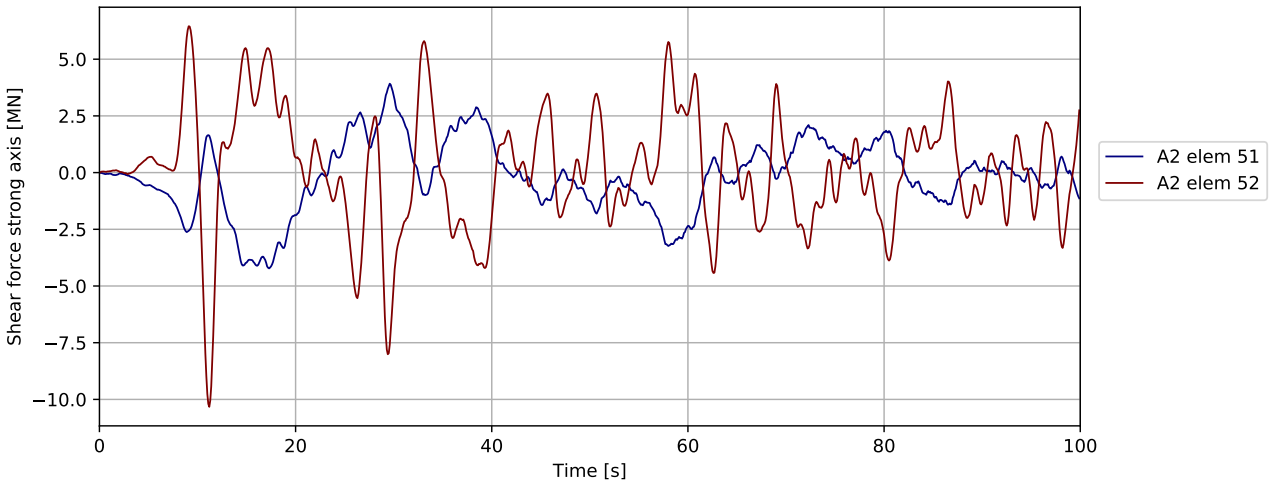

Figure 3.631: P A20 45deg - bridgegirder @ pylon: Shear force strong axis [MN]

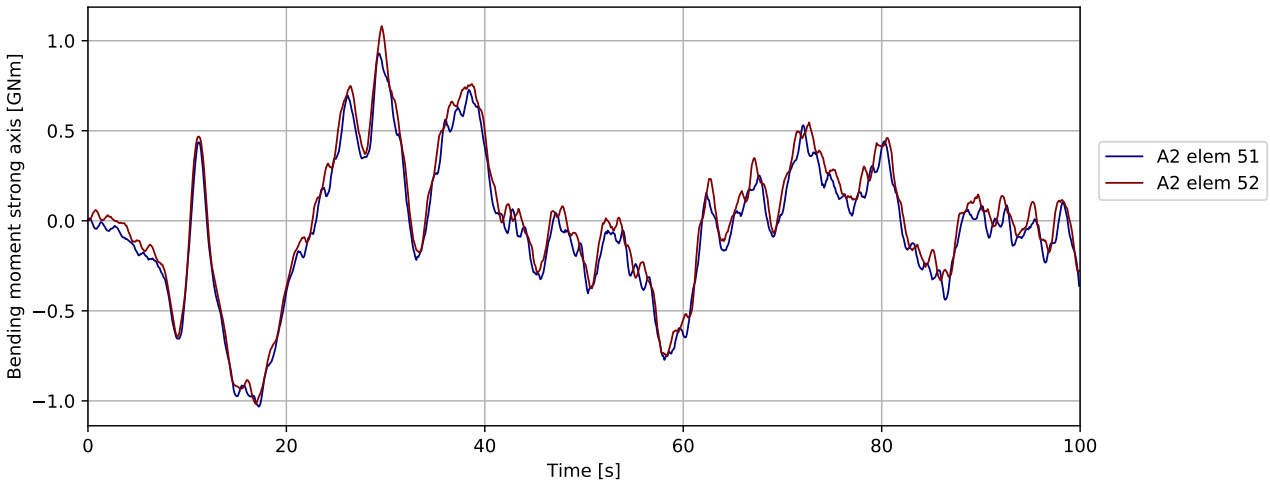

Figure 3.632: P A20 45deg - bridgegirder @ pylon: Bending moment strong axis [GNm]

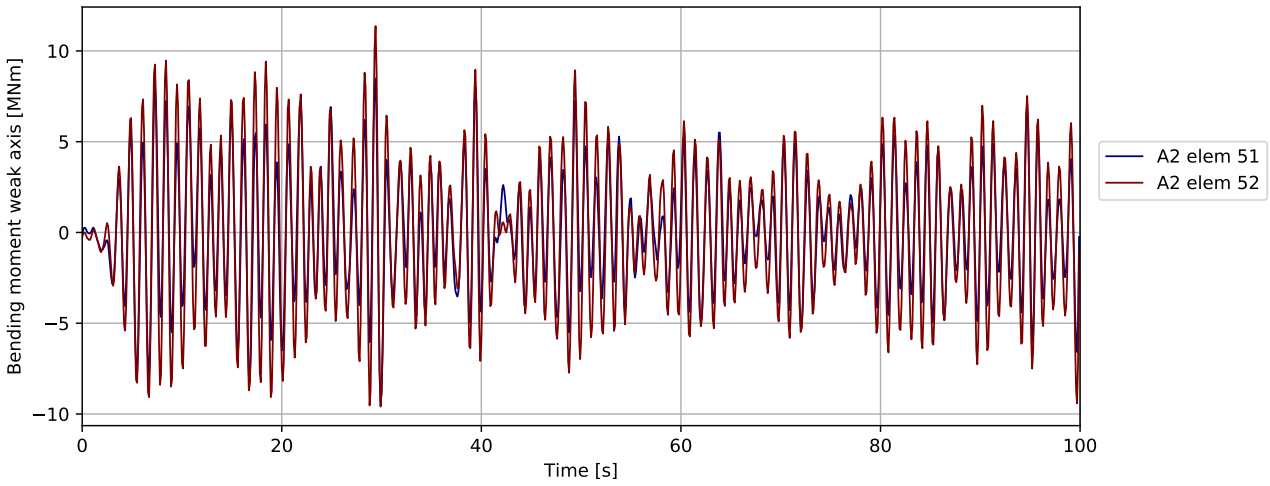

Figure 3.633: P A20 45deg - bridgegirder @ pylon: Bending moment weak axis [MNm]

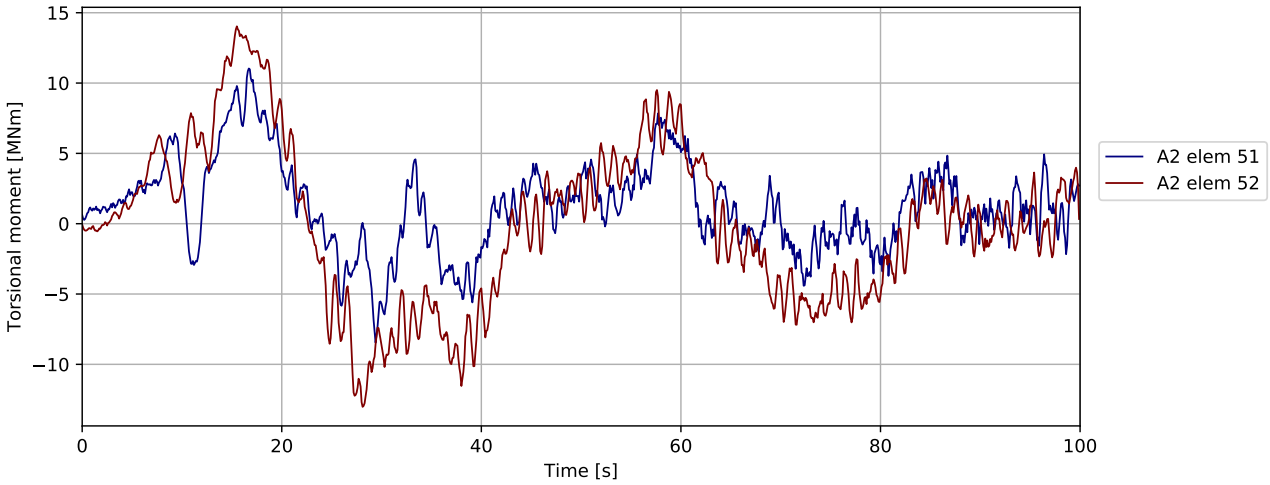

Figure 3.634: P A20 45deg - bridgegirder @ pylon: Torsional moment [MNm]

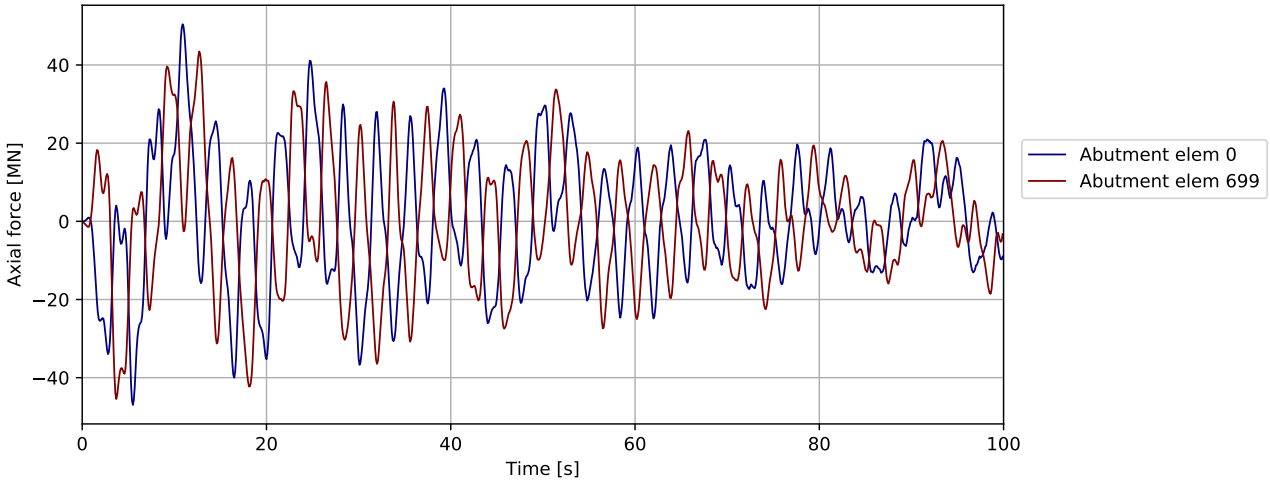

Figure 3.635: P A20 45deg - bridgegirder @abutments: Axial force [MN]

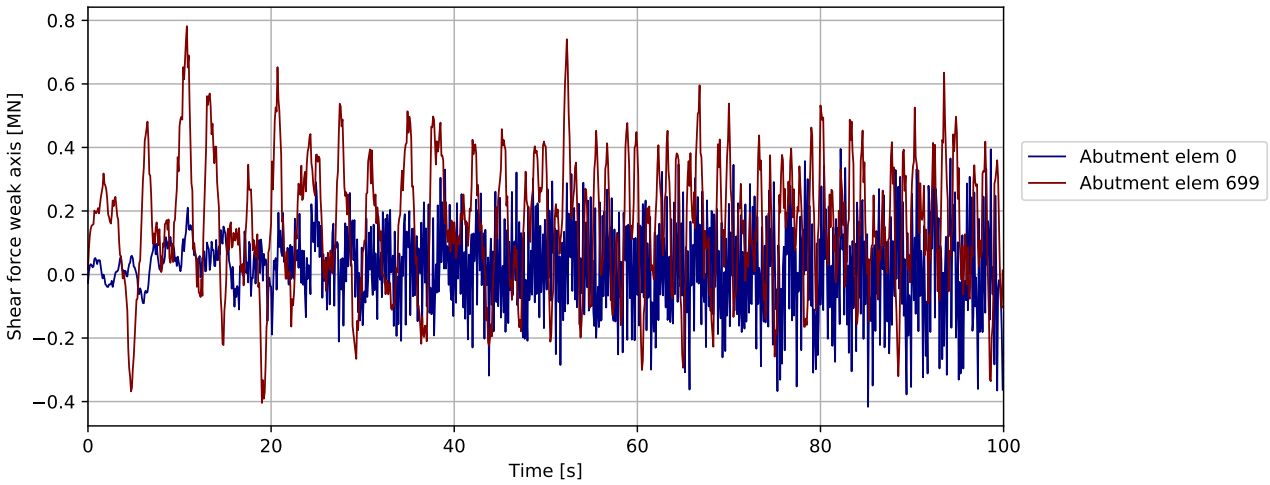

Figure 3.636: P A20 45deg - bridgegirder @abutments: Shear force weak axis [MN]

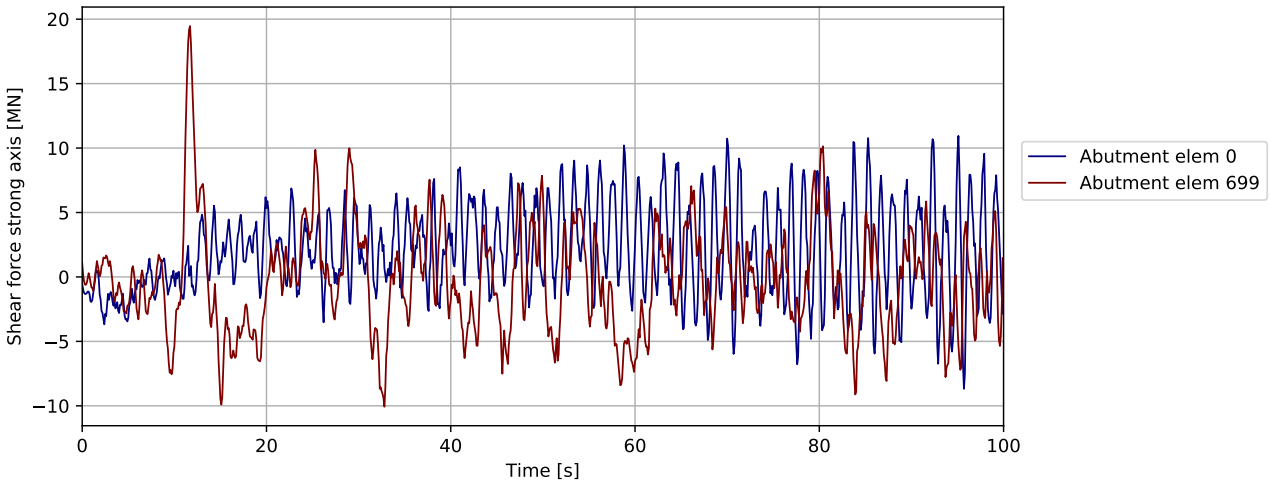

Figure 3.637: P A20 45deg - bridgegirder @abutments: Shear force strong axis [MN]

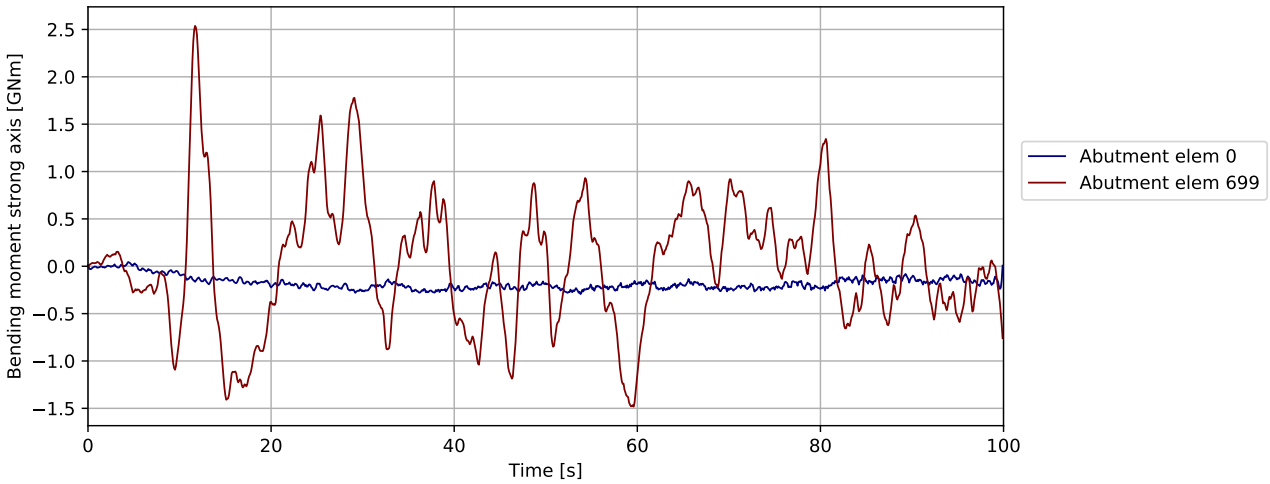

Figure 3.638: P A20 45deg - bridgegirder @abutments: Bending moment strong axis [GNm]

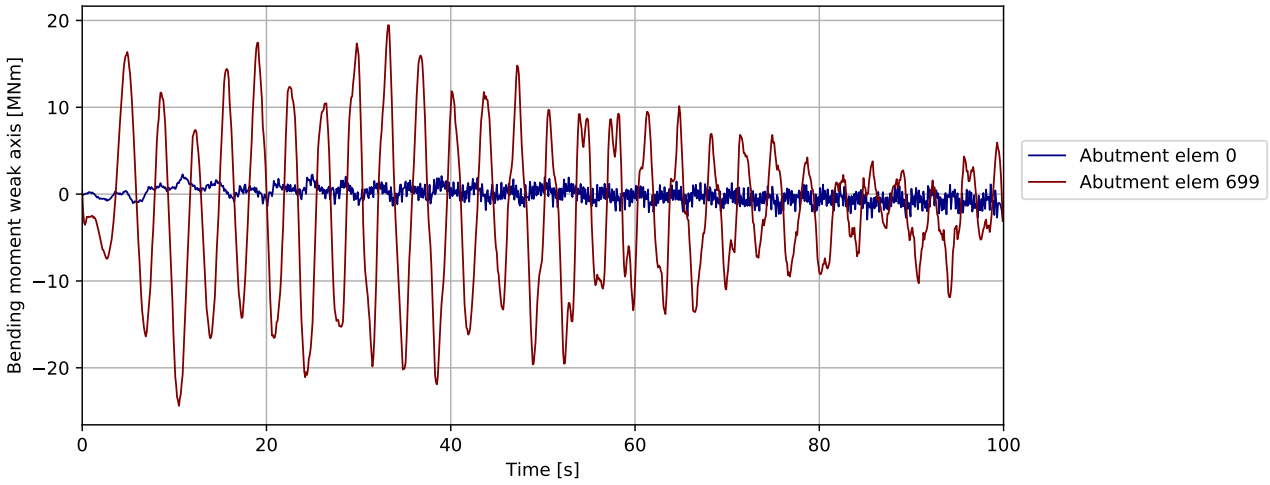

Figure 3.639: P A20 45deg - bridgegirder @abutments: Bending moment weak axis [MNm]

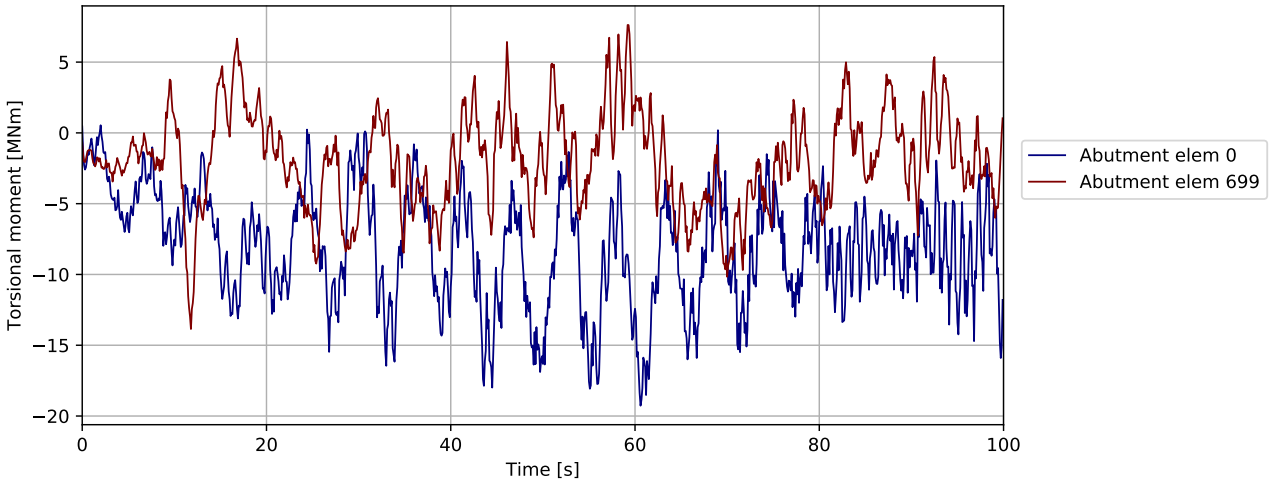

Figure 3.640: P A20 45deg - bridgegirder @abutments: Torsional moment [MNm]

Note : Compressive spring force is negative

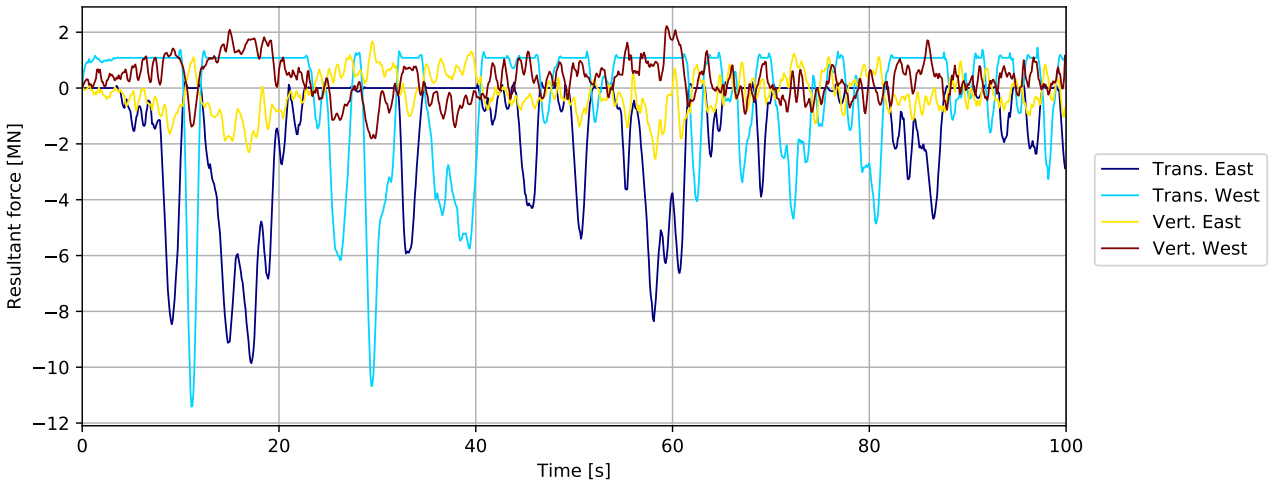

Figure 3.641: P A20 45deg - bridgegirder supports in tower: Resultant force [MN]

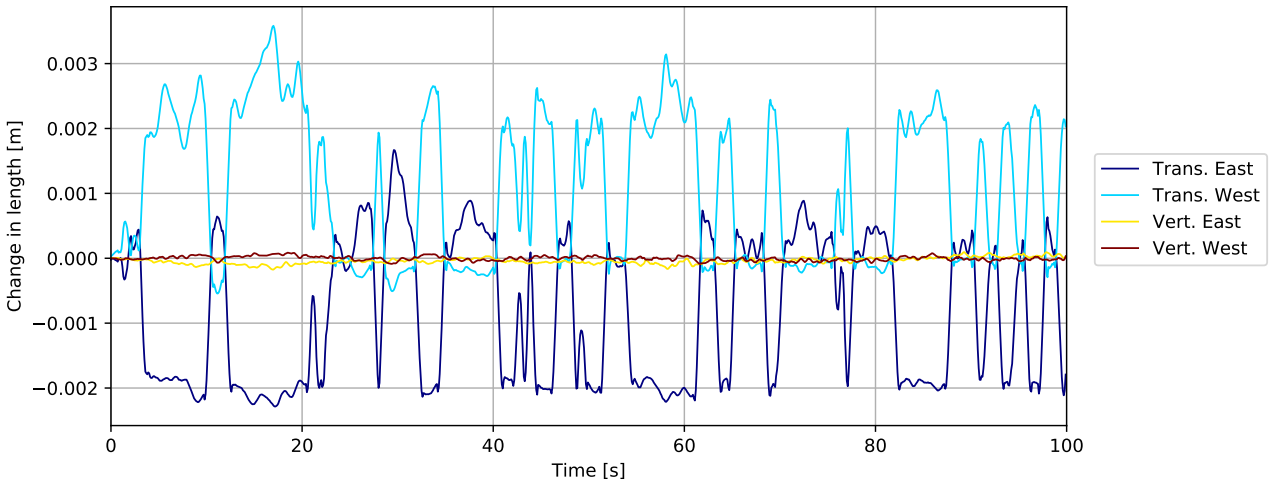

Figure 3.642: P A20 45deg - bridgegirder supports in tower: Change in length [m]

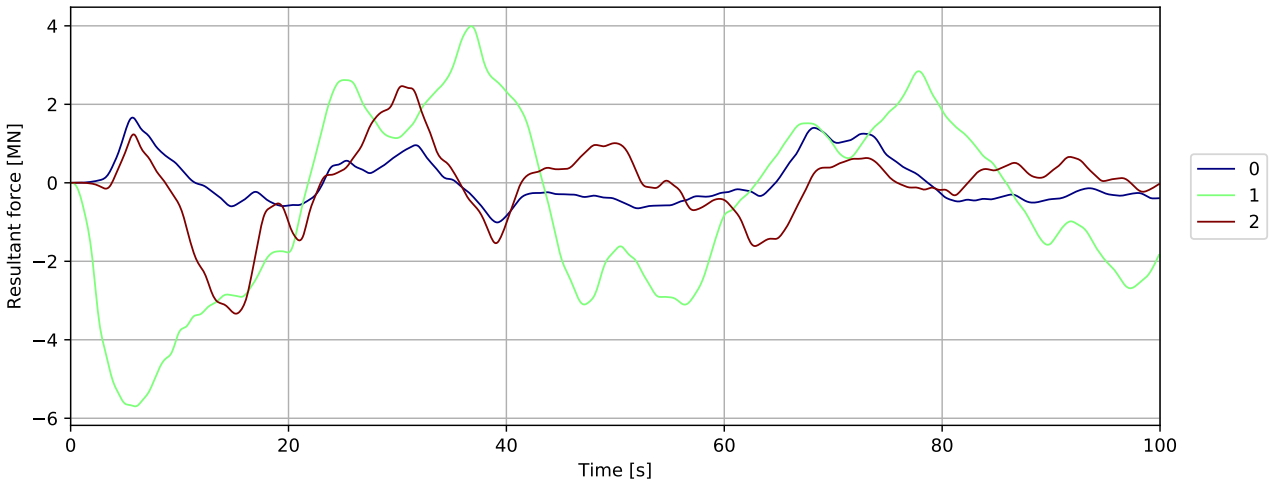

Figure 3.643: Mooring force

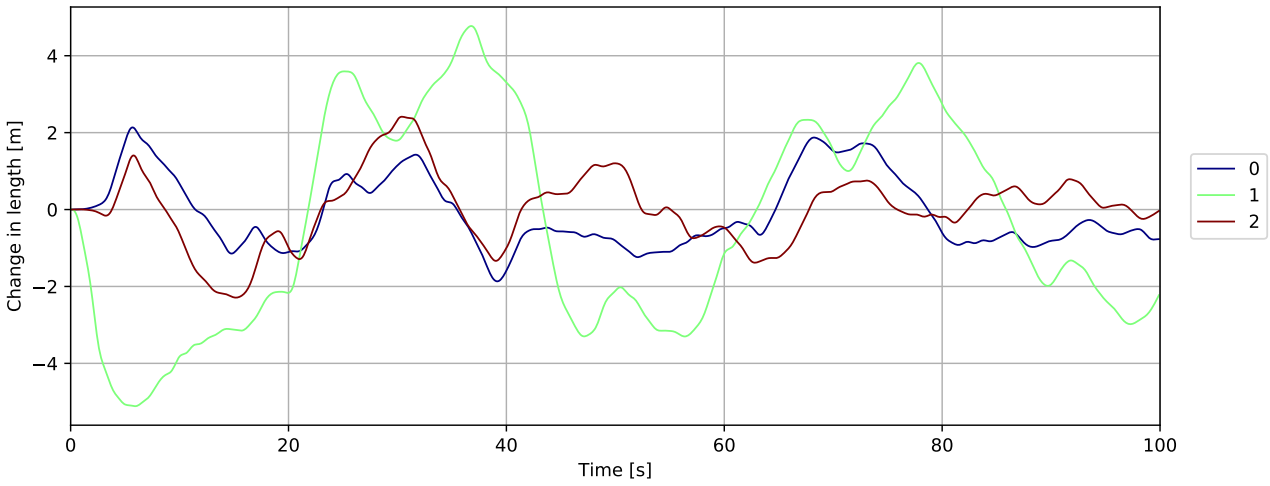

Figure 3.644: Mooring displacement

3.15 PontoonA30 45deg

3.15.1 Overall response

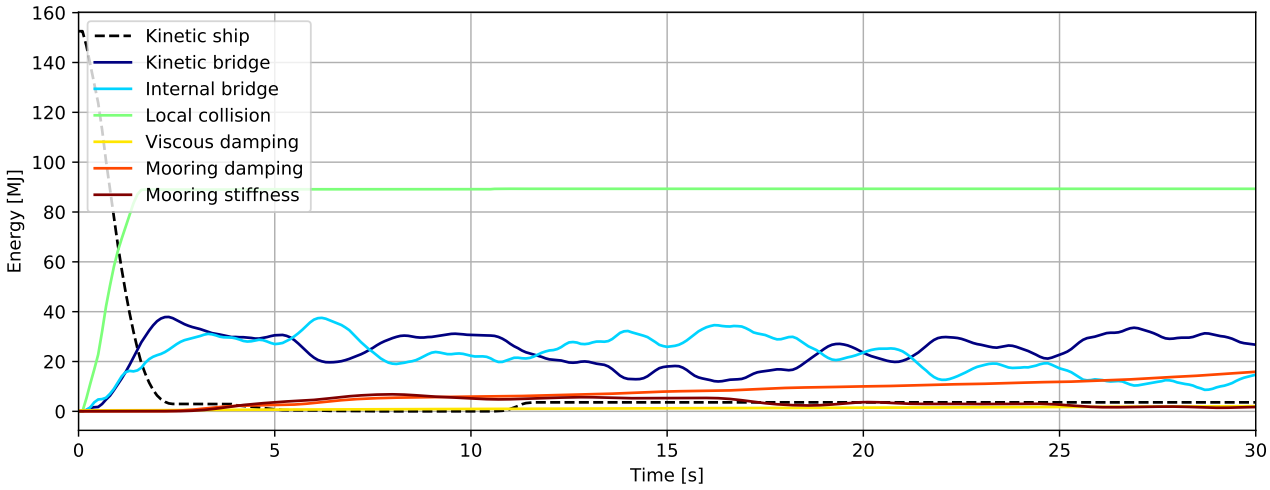

Figure 3.645: Energy [MJ] - initial phase

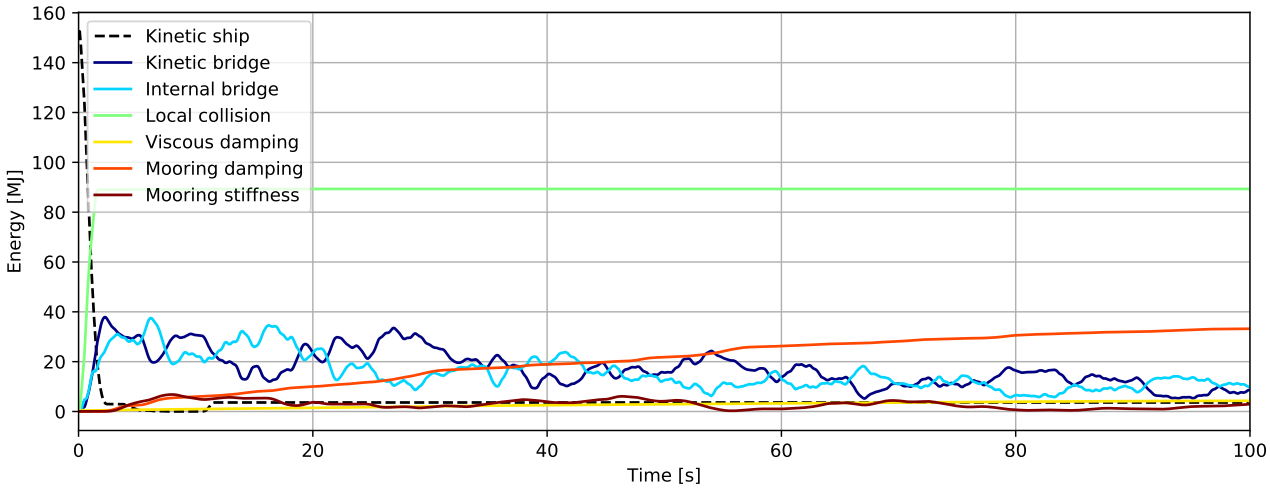

Figure 3.646: Energy [MJ]

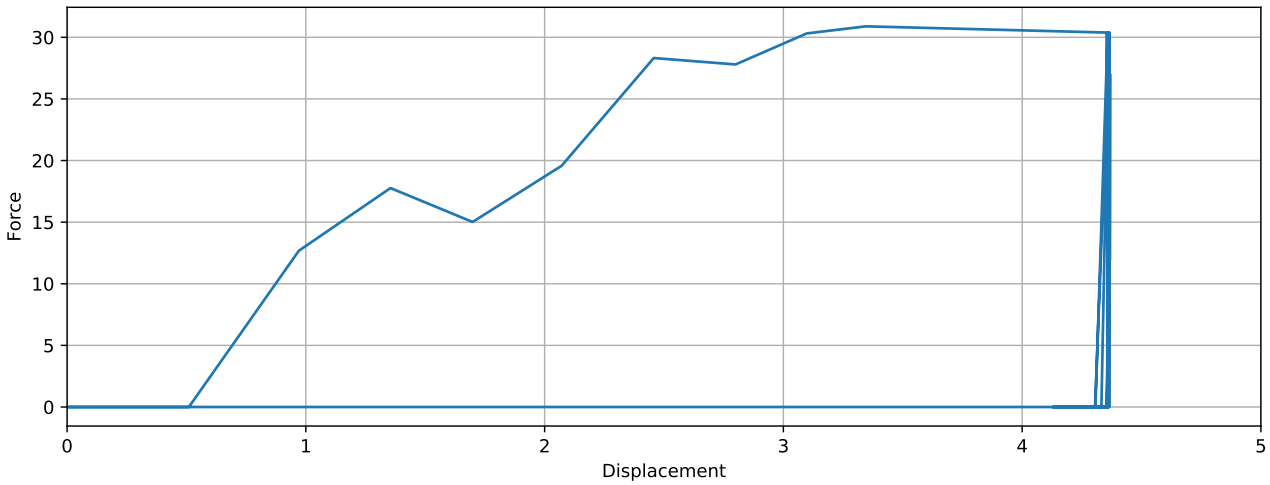

Figure 3.647: Simulated local collision force-displacement

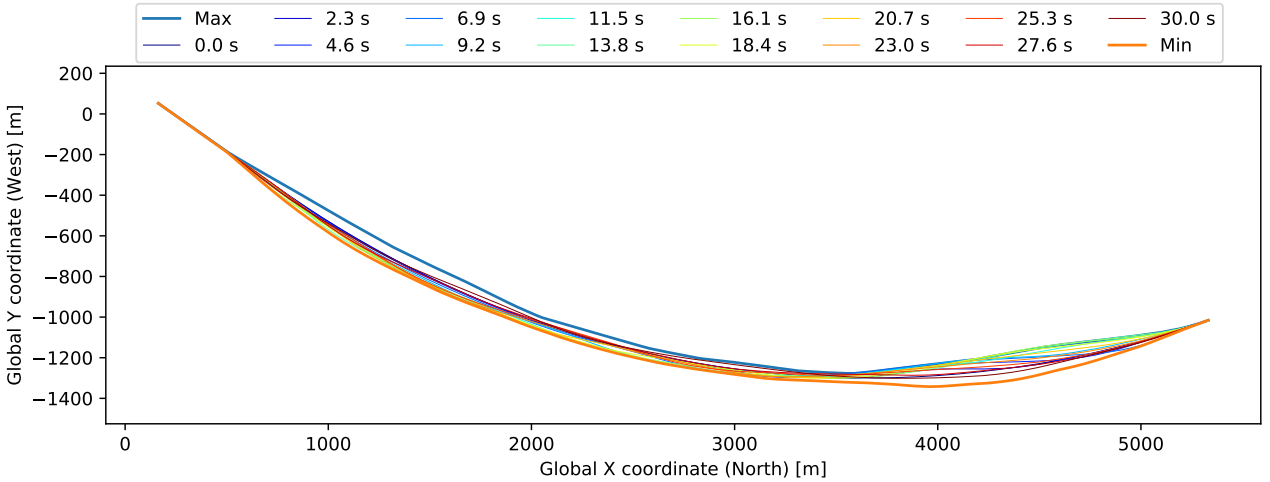

Figure 3.648: Bridgegirder deflection (10x displacment scaling)

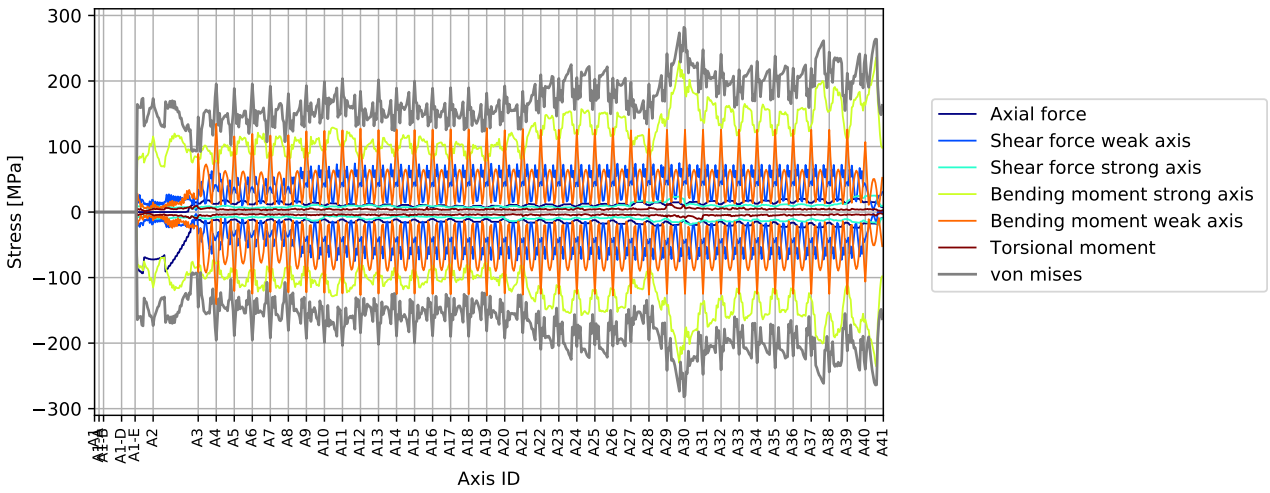

Figure 3.649: Stress envelope from all force components

3.15.2 Envelope plots

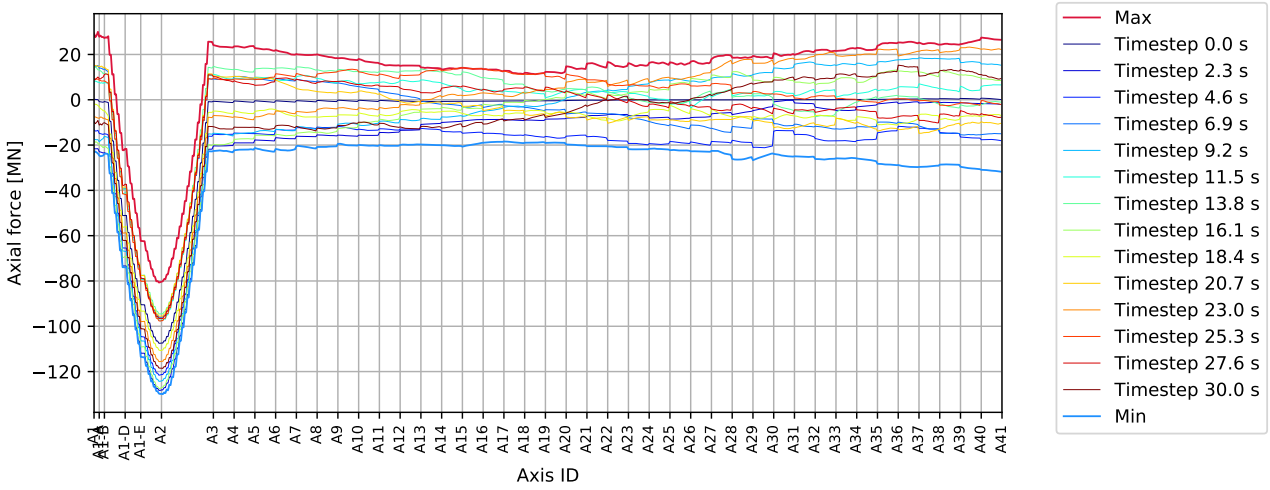

Figure 3.650: P A30 45deg - bridgegirder : Axial force [MN]

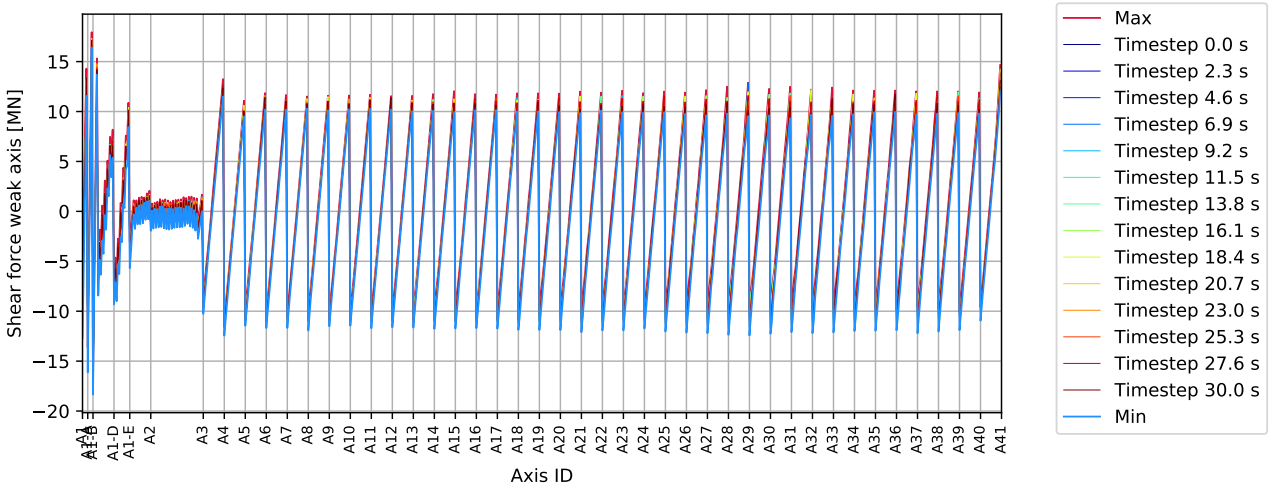

Figure 3.651: P A30 45deg - bridgegirder : Shear force weak axis [MN]

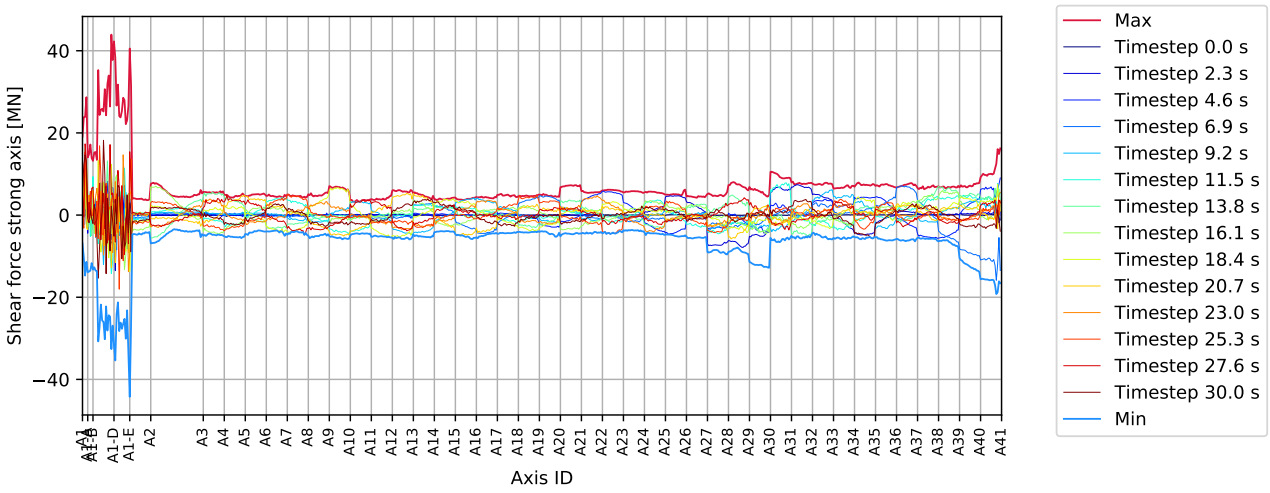

Figure 3.652: P A30 45deg - bridgegirder : Shear force strong axis [MN]

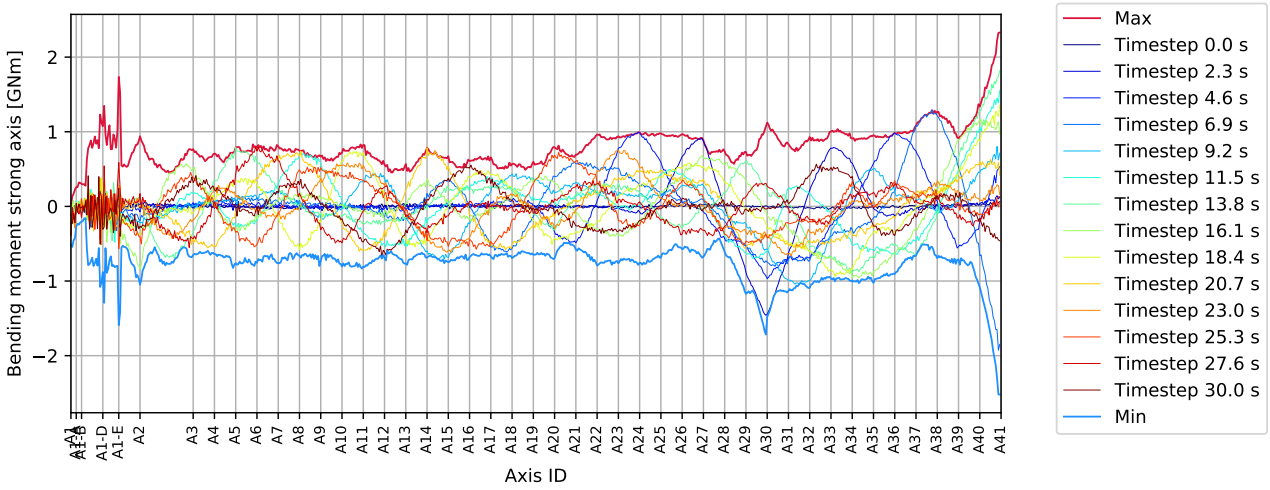

Figure 3.653: P A30 45deg - bridgegirder : Bending moment strong axis [GNm]

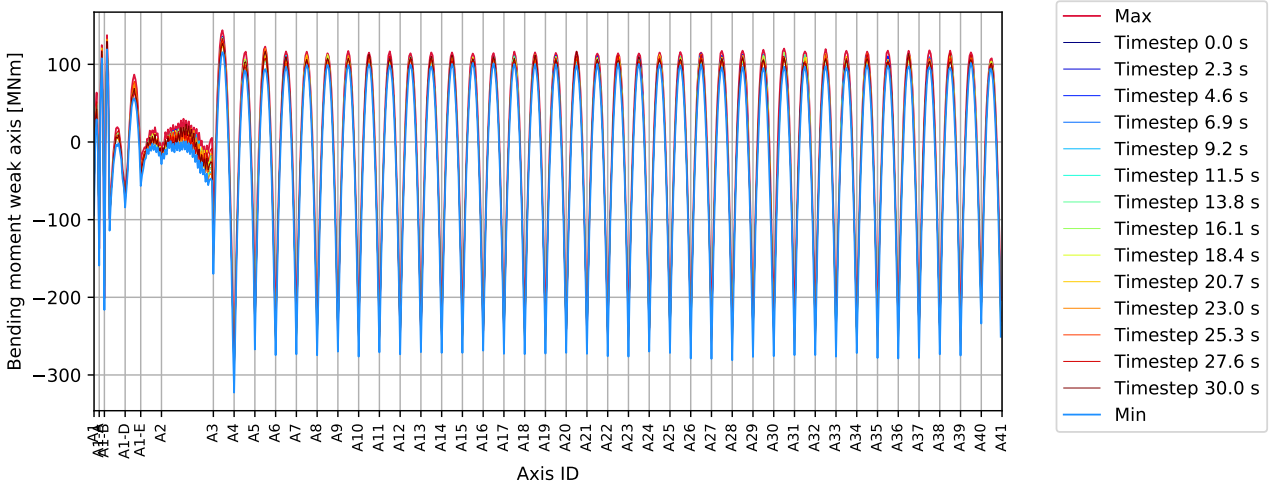

Figure 3.654: P A30 45deg - bridgegirder : Bending moment weak axis [MNm]

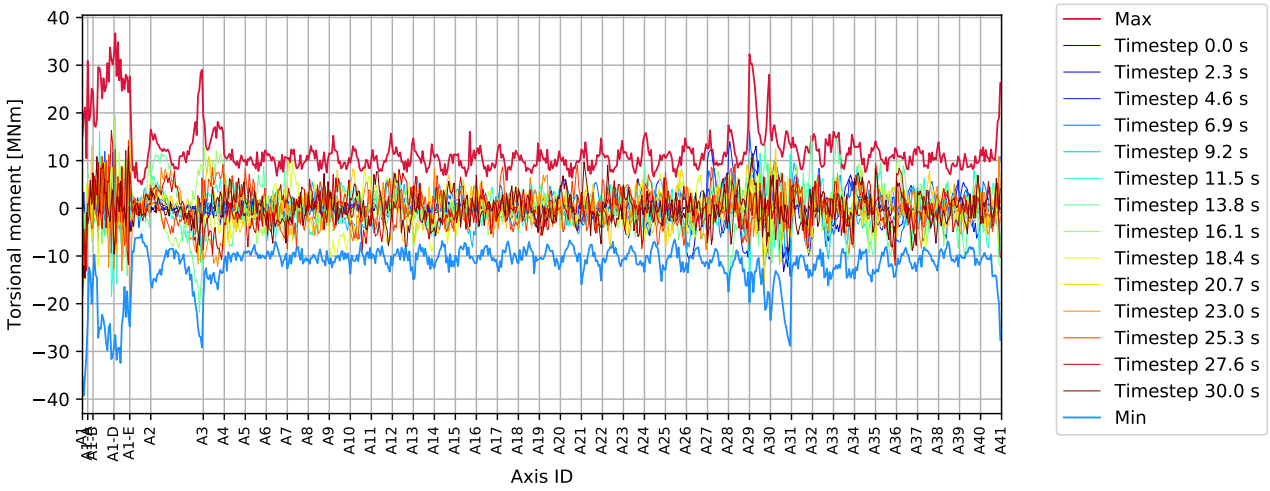

Figure 3.655: P A30 45deg - bridgegirder : Torsional moment [MNm]

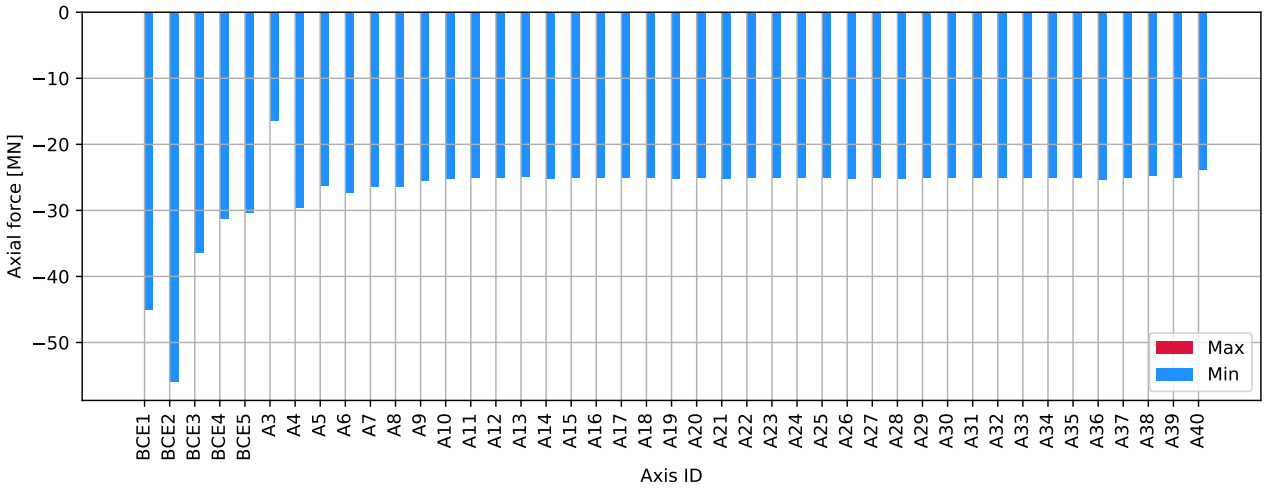

Figure 3.656: P A30 45deg - columns bottom : Axial force [MN]

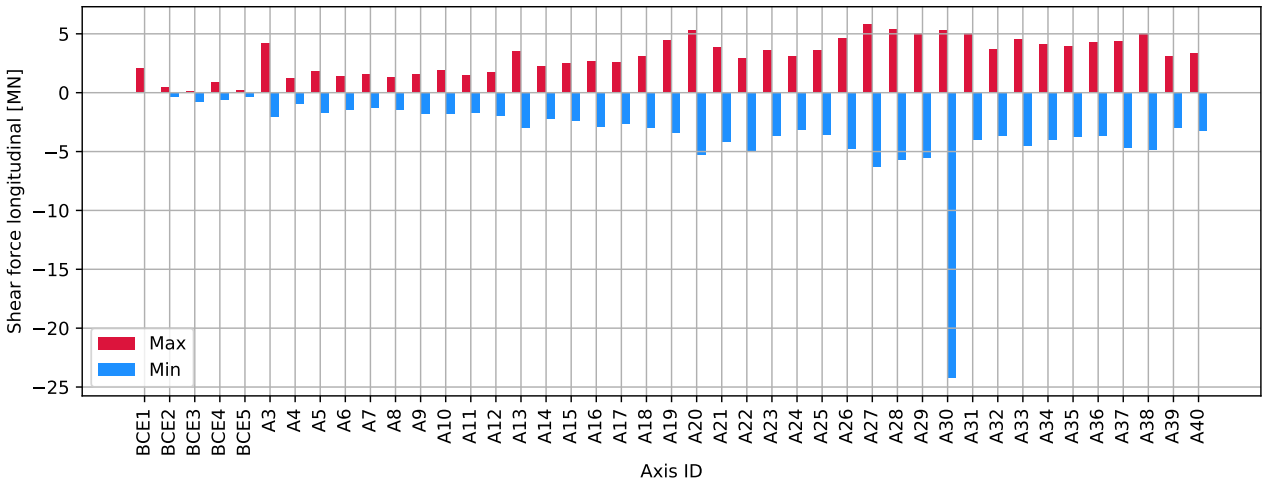

Figure 3.657: P A30 45deg - columns bottom : Shear force longitudinal [MN]

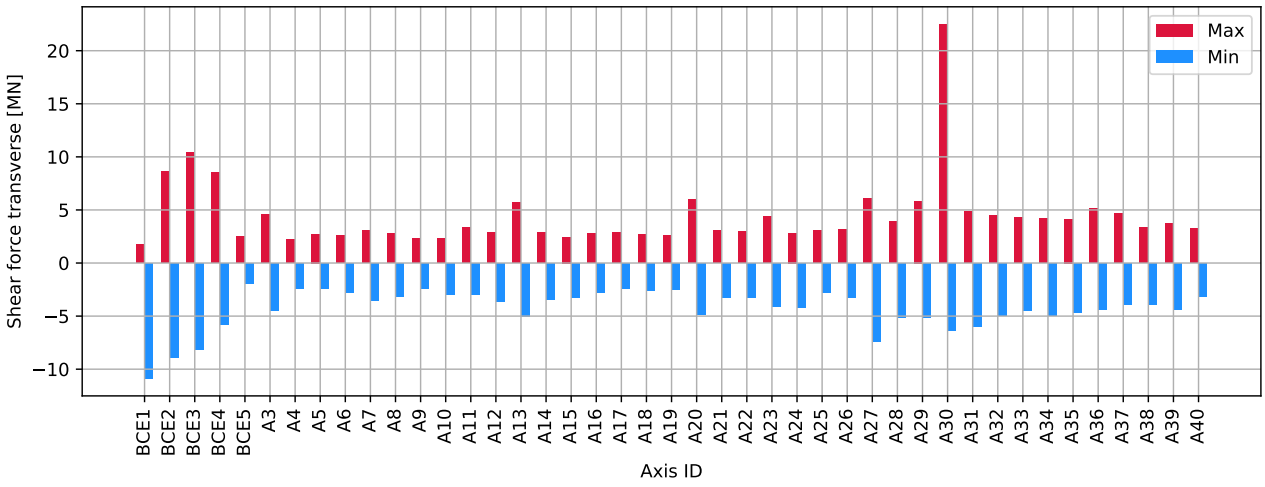

Figure 3.658: P A30 45deg - columns bottom : Shear force transverse [MN]

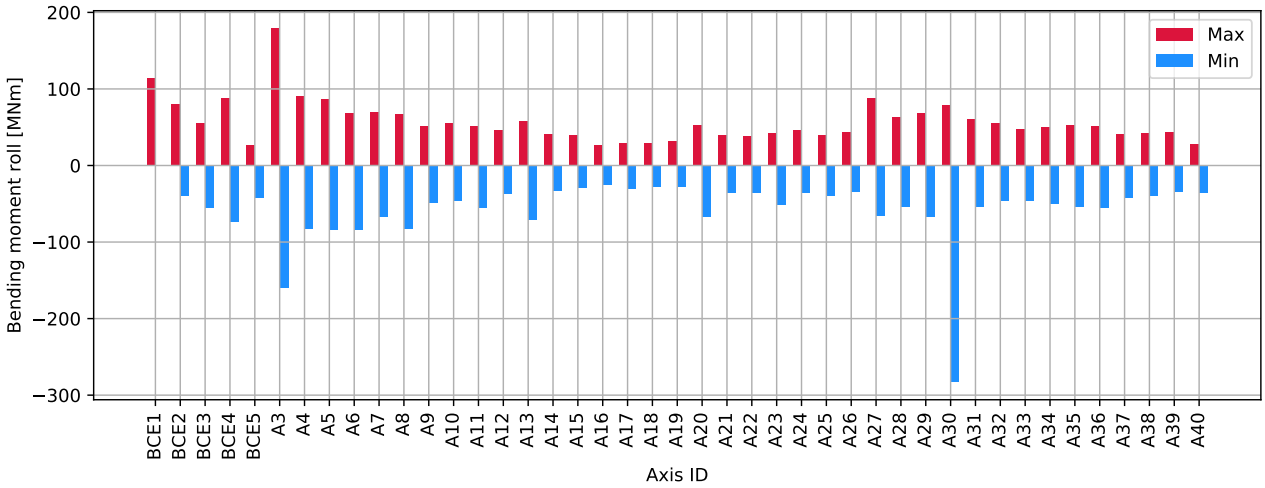

Figure 3.659: P A30 45deg - columns bottom : Bending moment roll [MNm]

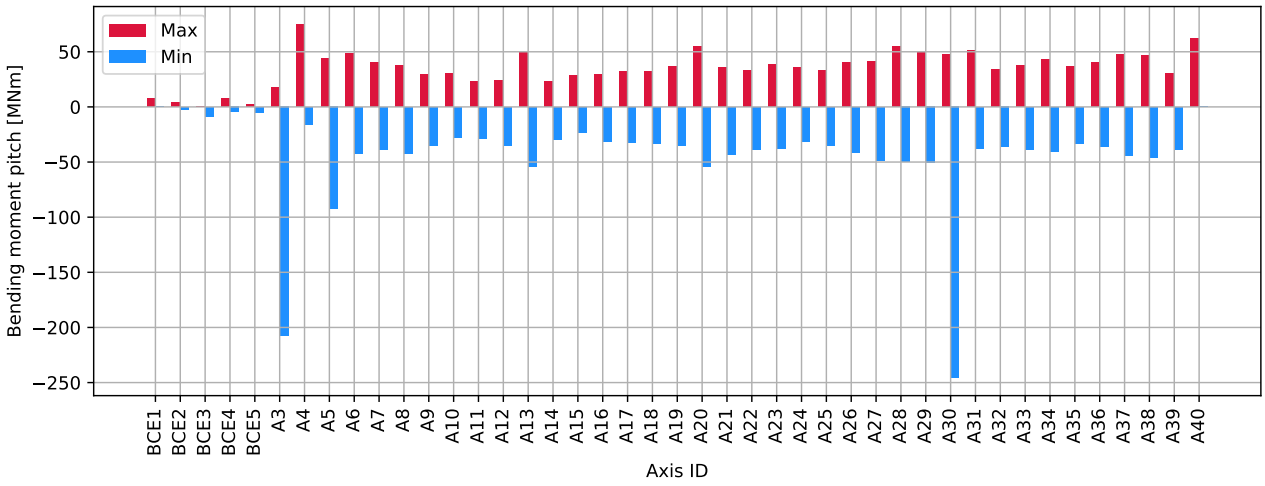

Figure 3.660: P A30 45deg - columns bottom : Bending moment pitch [MNm]

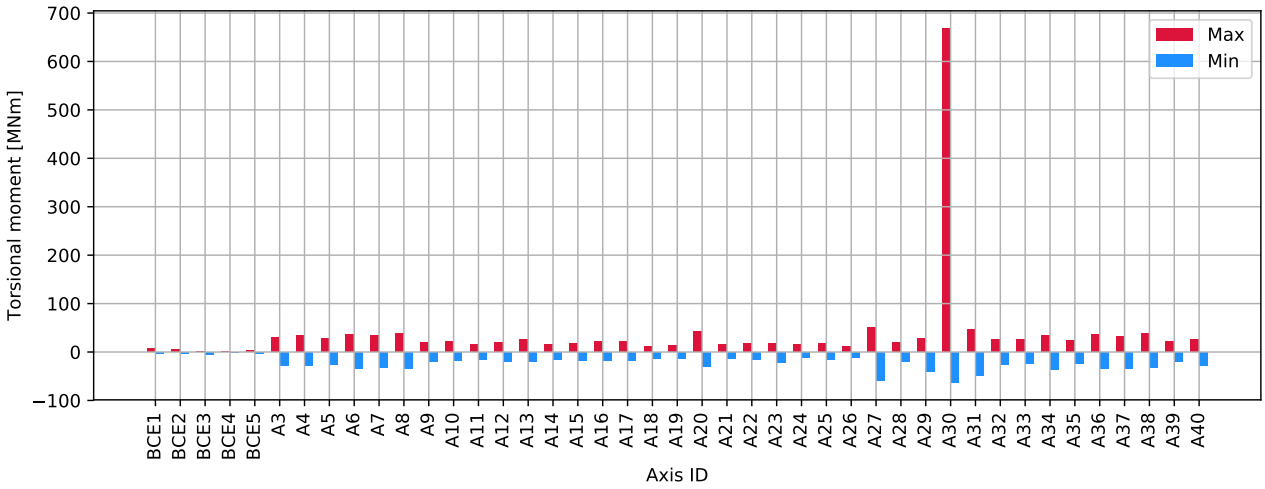

Figure 3.661: P A30 45deg - columns bottom : Torsional moment [MNm]

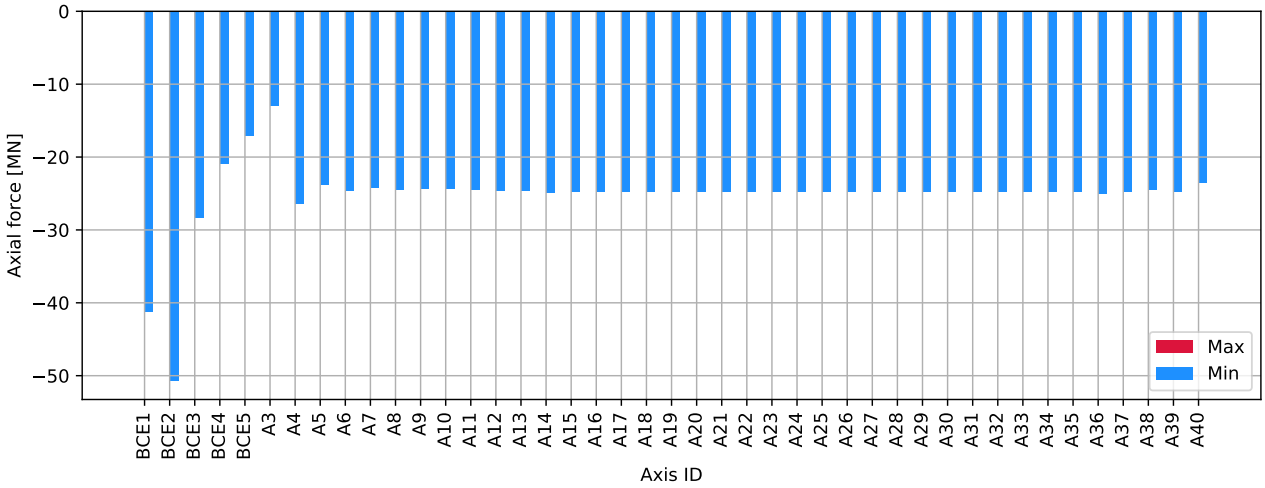

Figure 3.662: P A30 45deg - columns top : Axial force [MN]

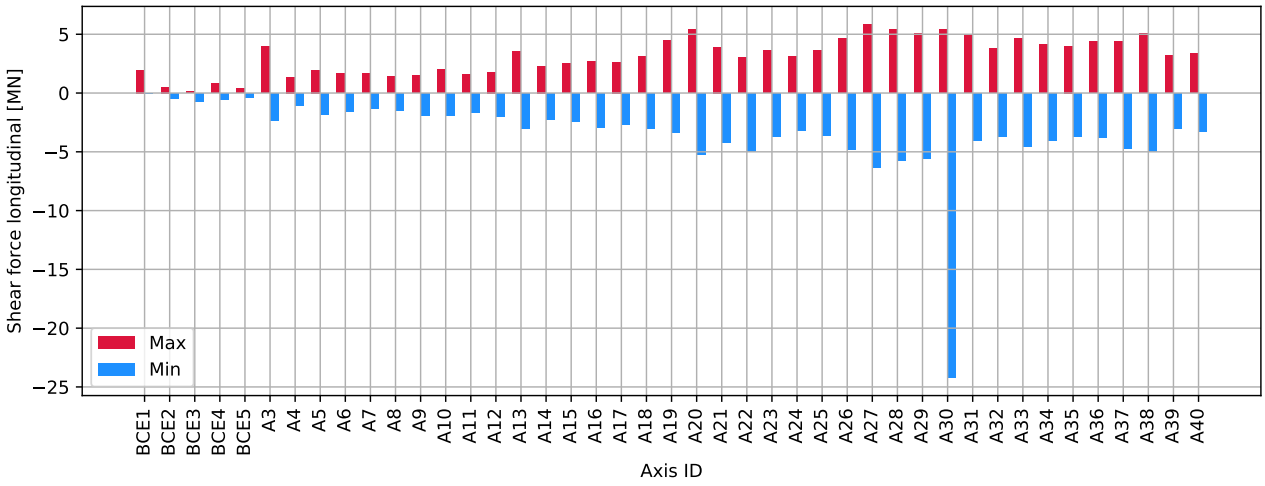

Figure 3.663: P A30 45deg - columns top : Shear force longitudinal [MN]

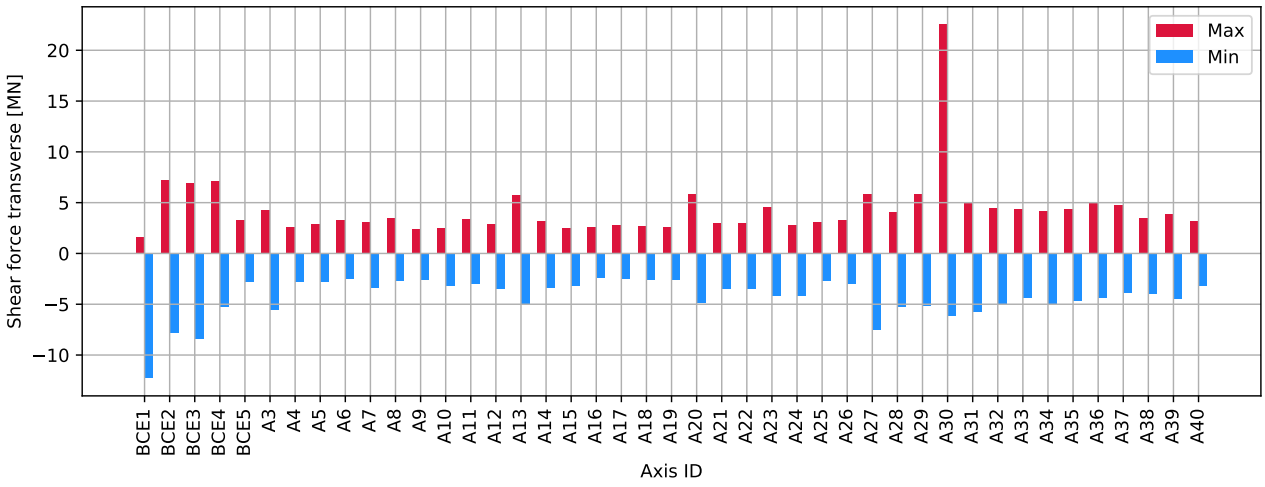

Figure 3.664: P A30 45deg - columns top : Shear force transverse [MN]

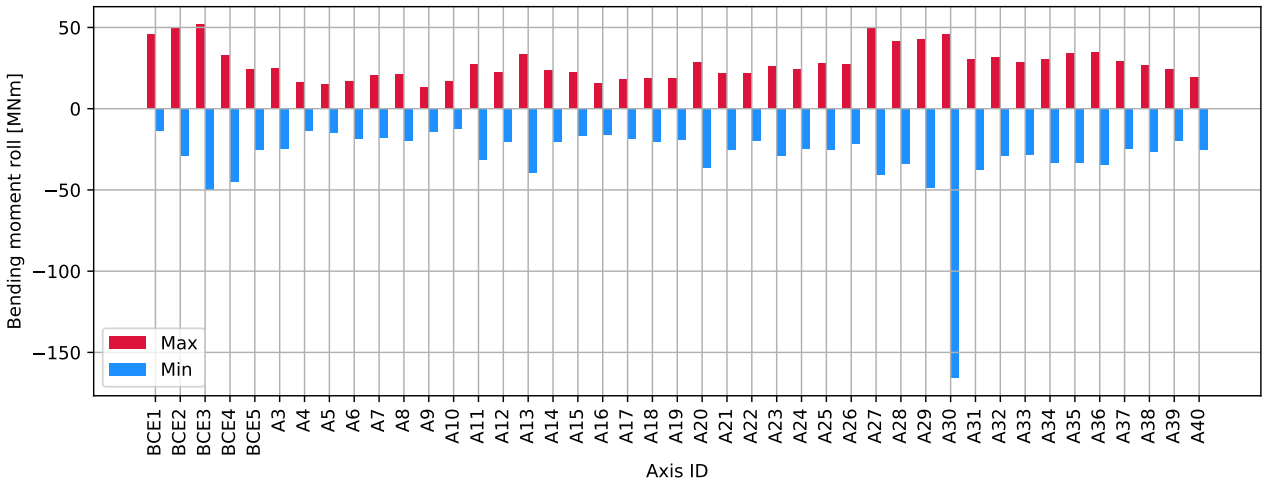

Figure 3.665: P A30 45deg - columns top : Bending moment roll [MNm]

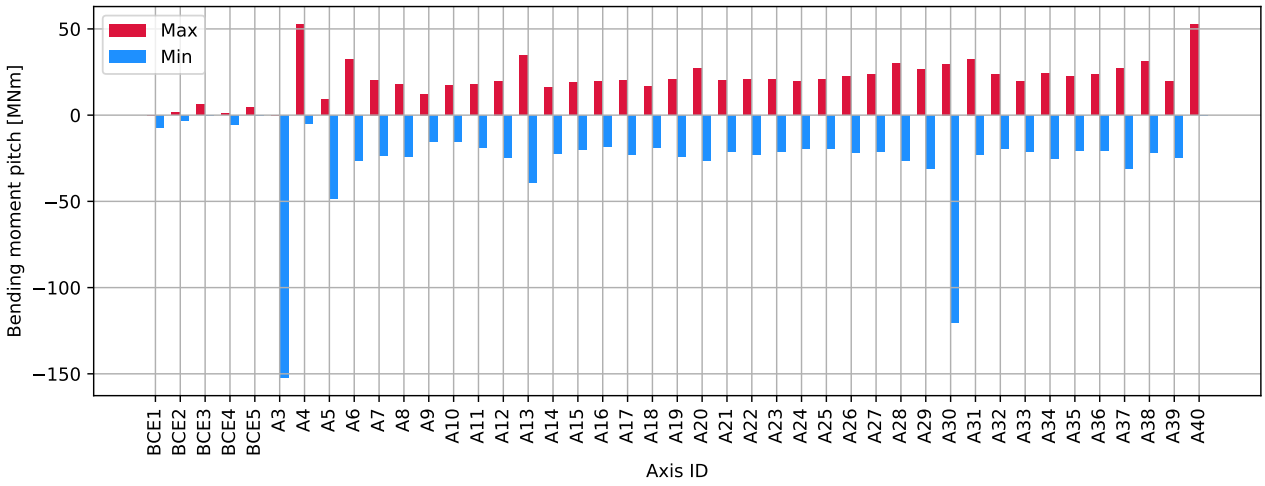

Figure 3.666: P A30 45deg - columns top : Bending moment pitch [MNm]

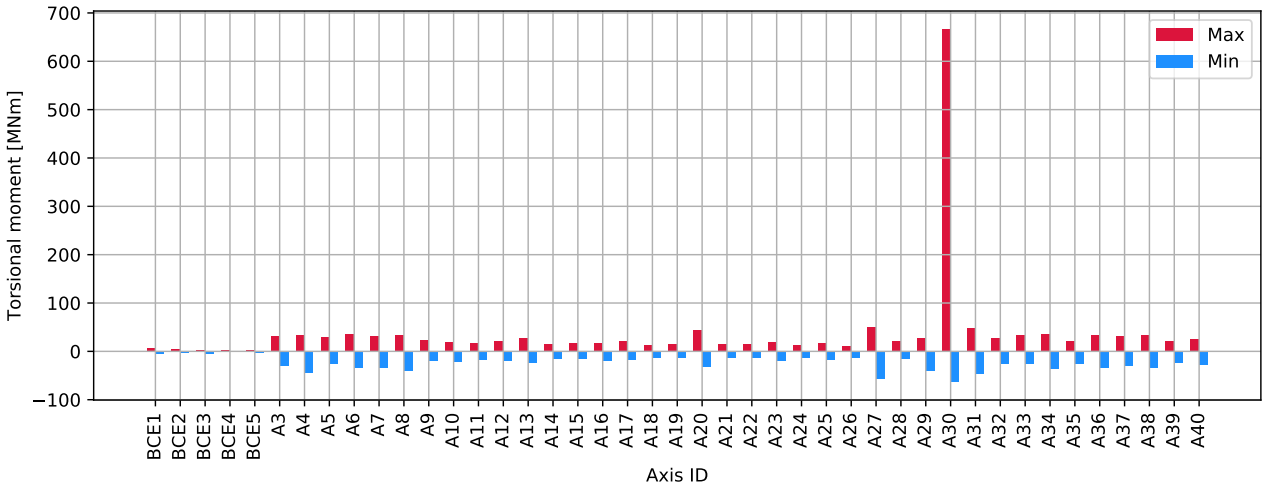

Figure 3.667: P A30 45deg - columns top : Torsional moment [MNm]

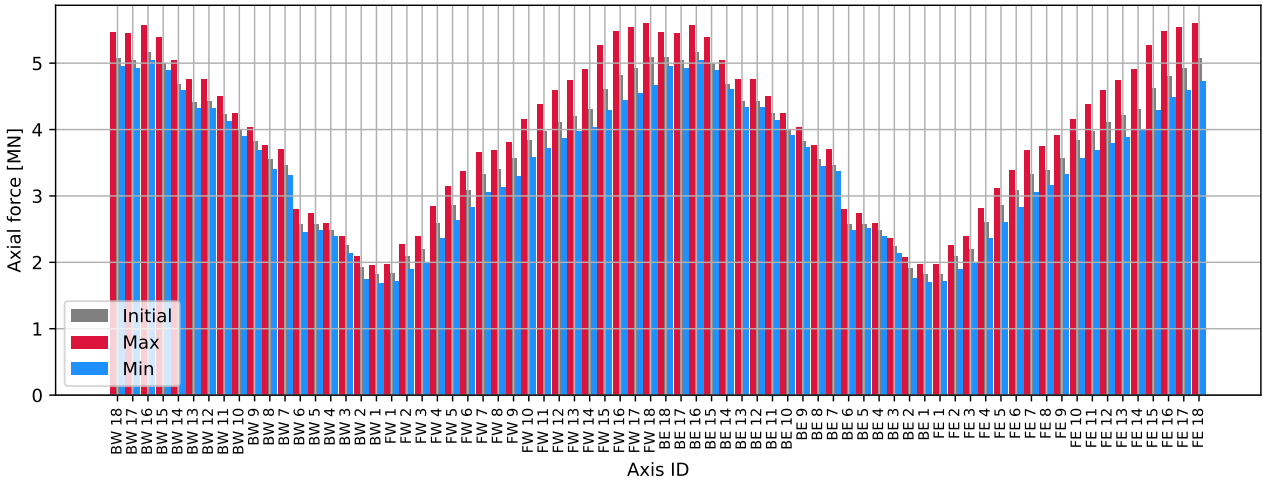

Figure 3.668: P A30 45deg - cables : Axial force [MN]

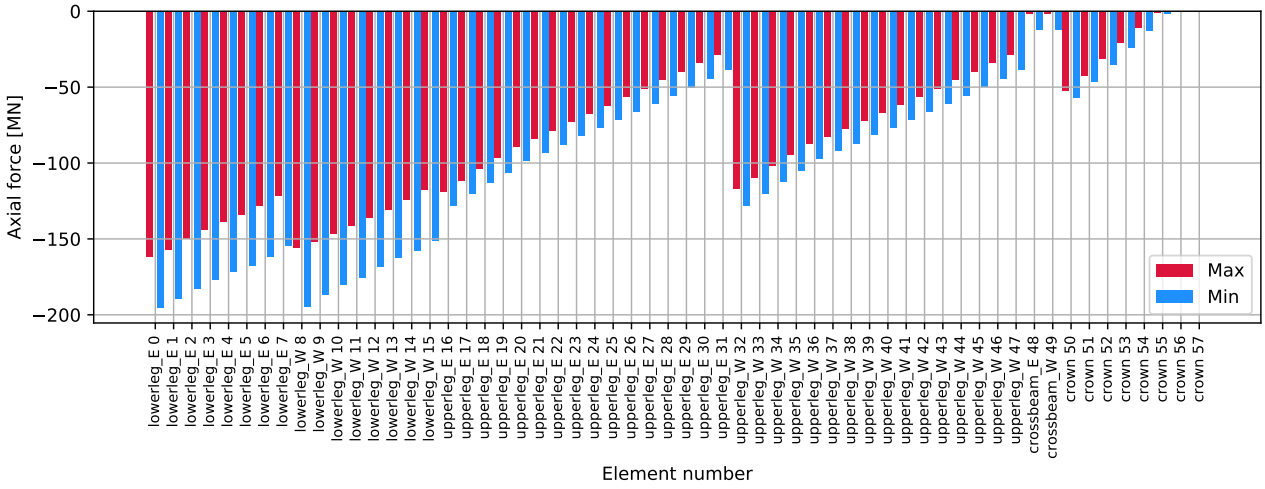

Figure 3.669: P A30 45deg - tower: Axial force [MN]

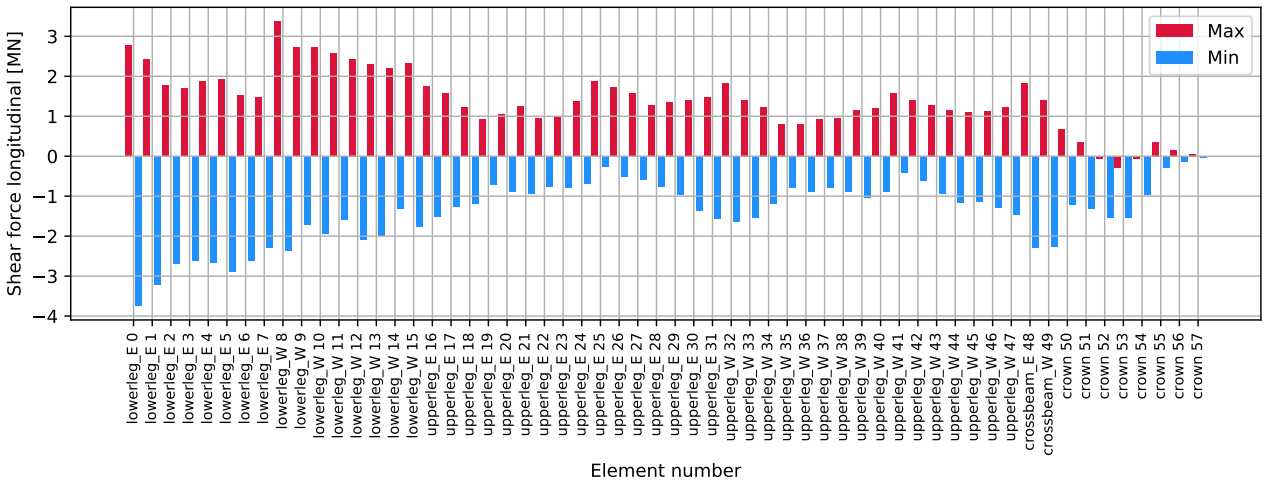

Figure 3.670: P A30 45deg - tower: Shear force longitudinal [MN]

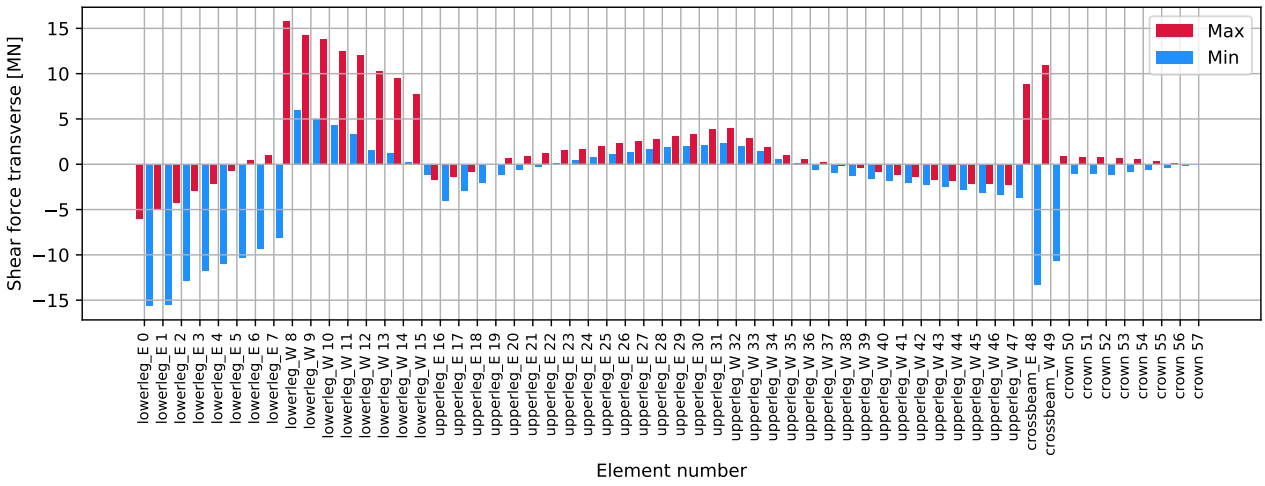

Figure 3.671: P A30 45deg - tower: Shear force transverse [MN]

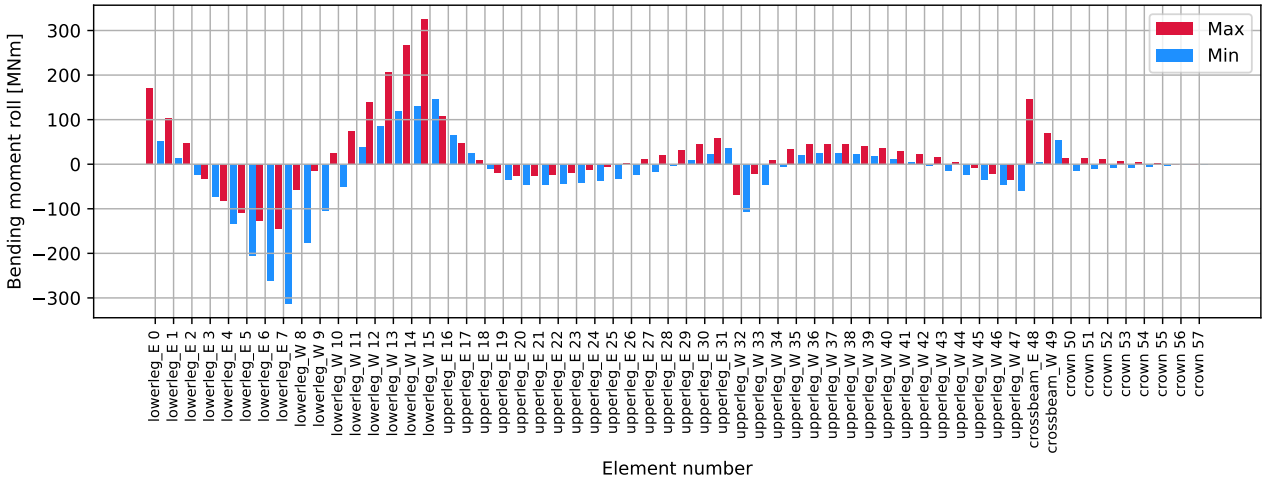

Figure 3.672: P A30 45deg - tower: Bending moment roll [MNm]

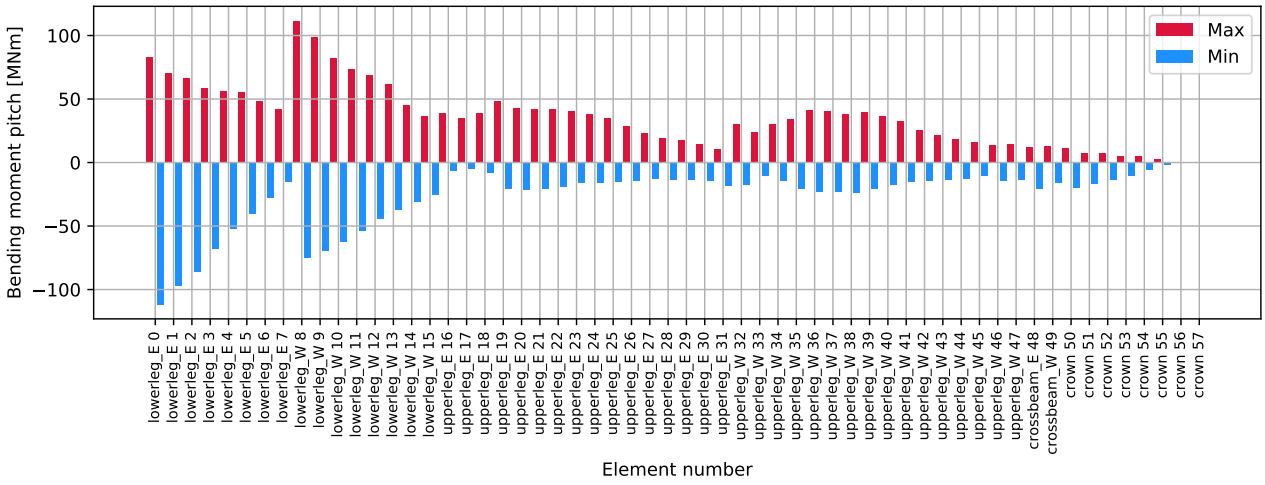

Figure 3.673: P A30 45deg - tower: Bending moment pitch [MNm]

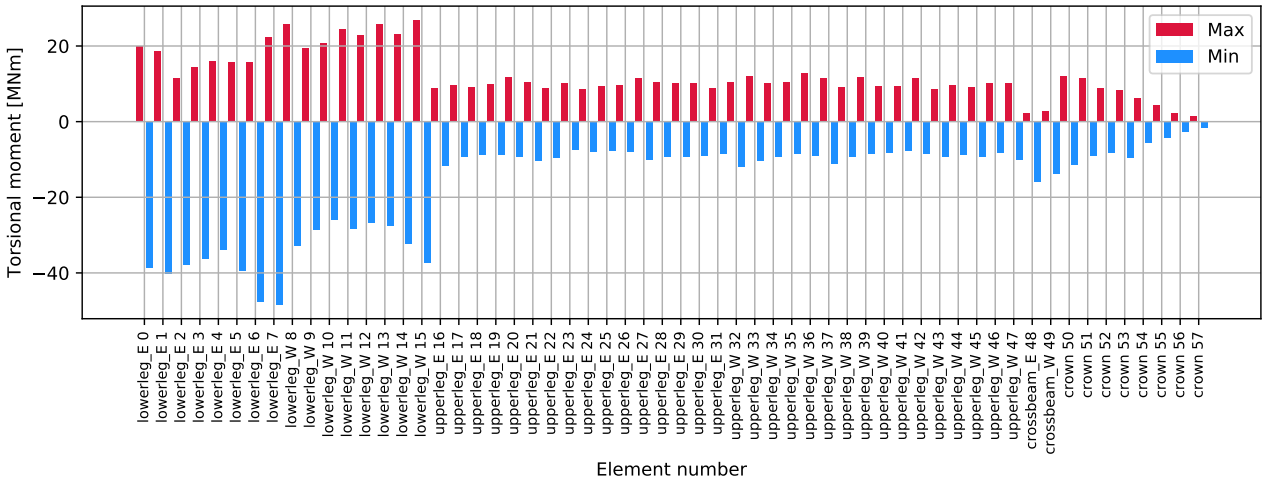

Figure 3.674: P A30 45deg - tower: Torsional moment [MNm]

3.15.3 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

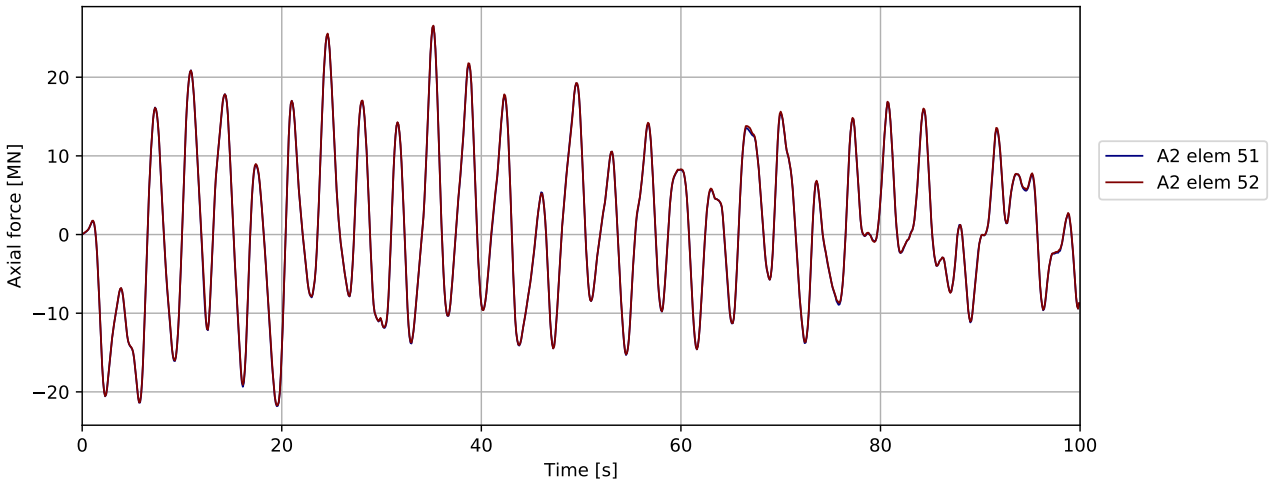

Figure 3.675: P A30 45deg - bridgegirder @ pylon: Axial force [MN]

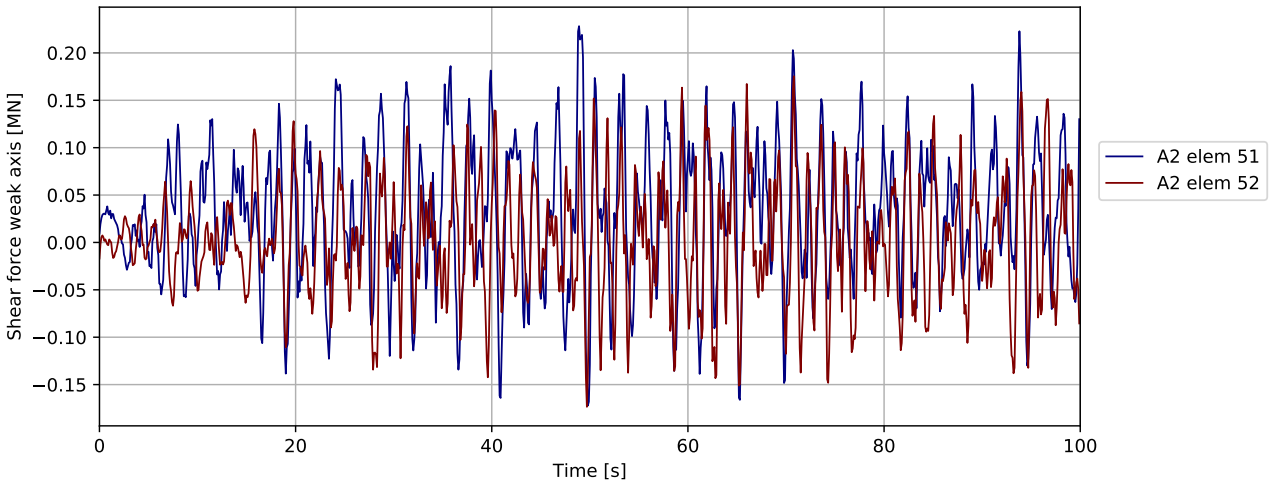

Figure 3.676: P A30 45deg - bridgegirder @ pylon: Shear force weak axis [MN]

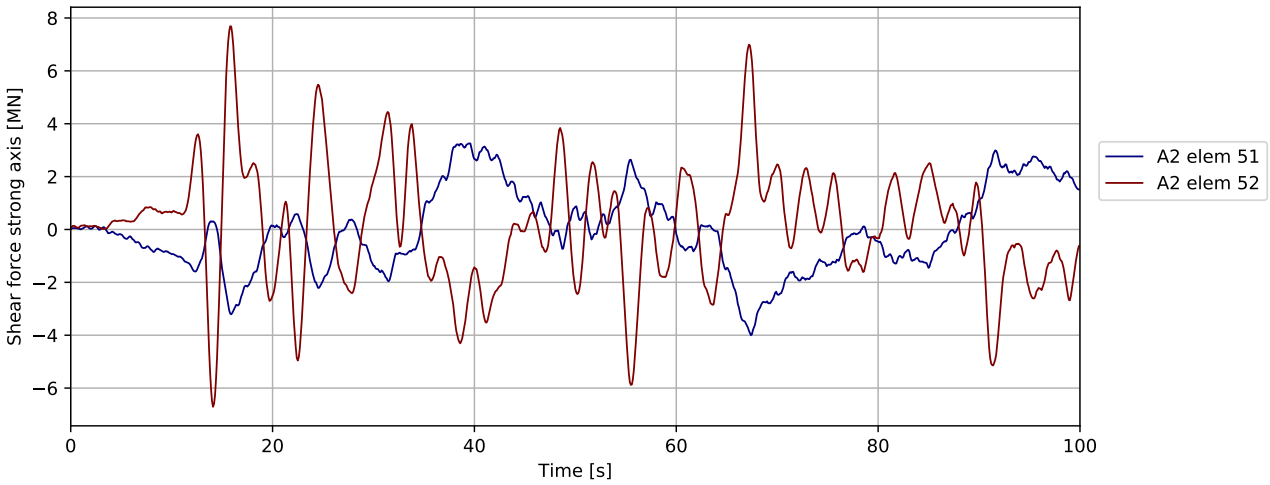

Figure 3.677: P A30 45deg - bridgegirder @ pylon: Shear force strong axis [MN]

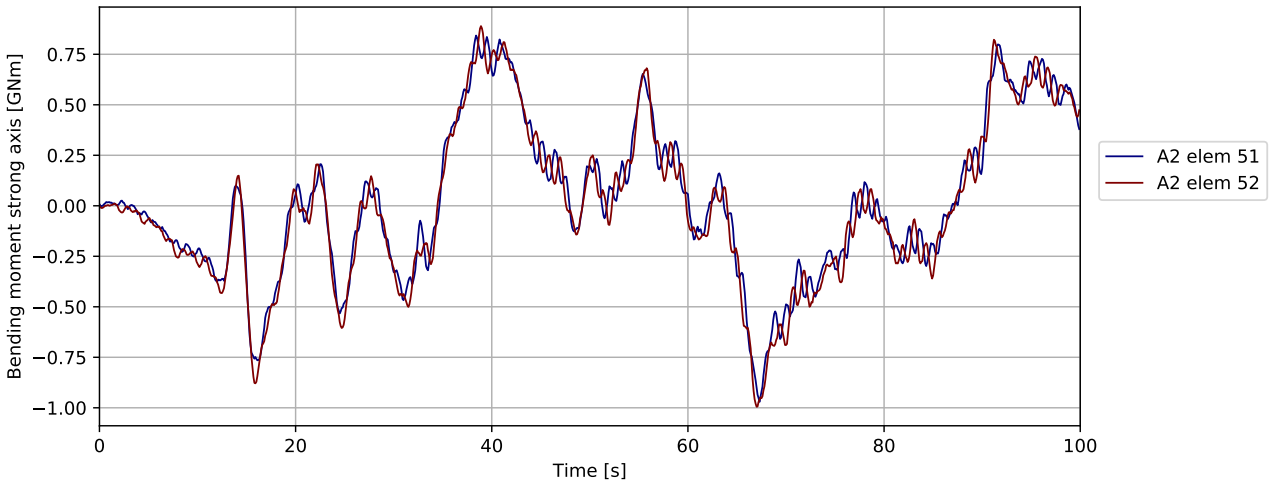

Figure 3.678: P A30 45deg - bridgegirder @ pylon: Bending moment strong axis [GNm]

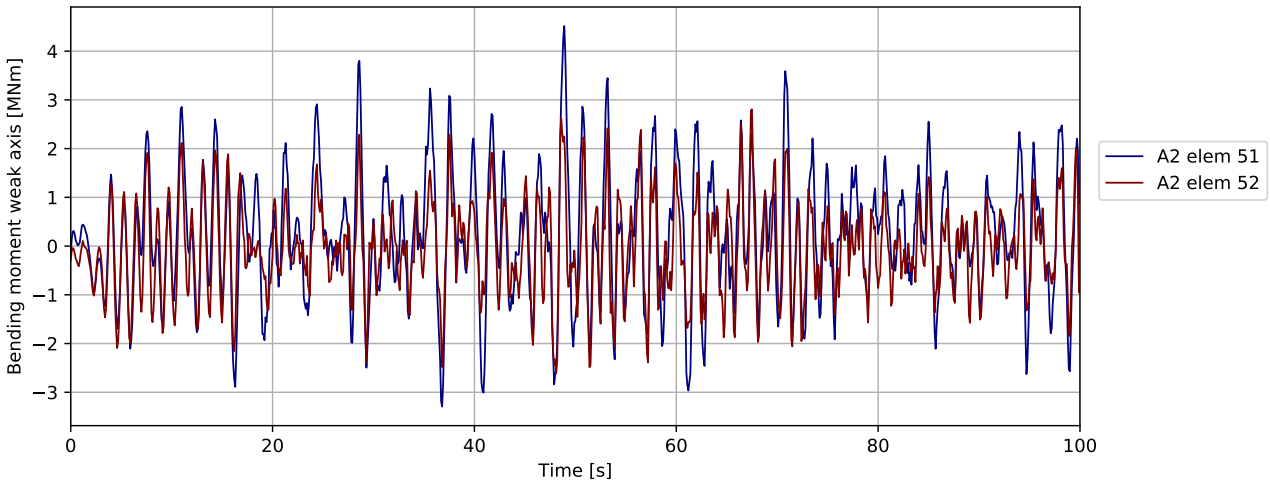

Figure 3.679: P A30 45deg - bridgegirder @ pylon: Bending moment weak axis [MNm]

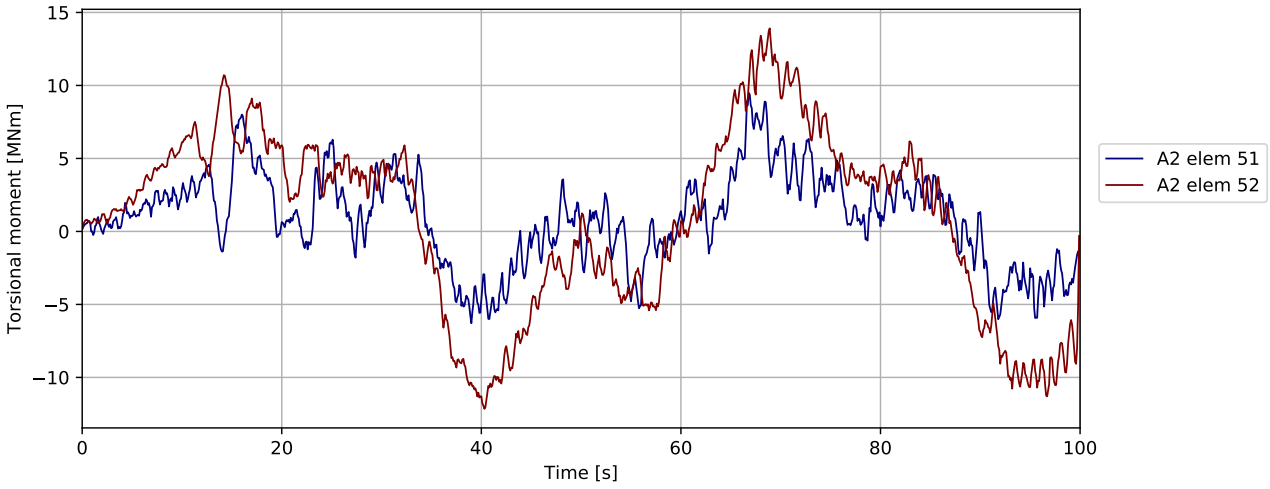

Figure 3.680: P A30 45deg - bridgegirder @ pylon: Torsional moment [MNm]

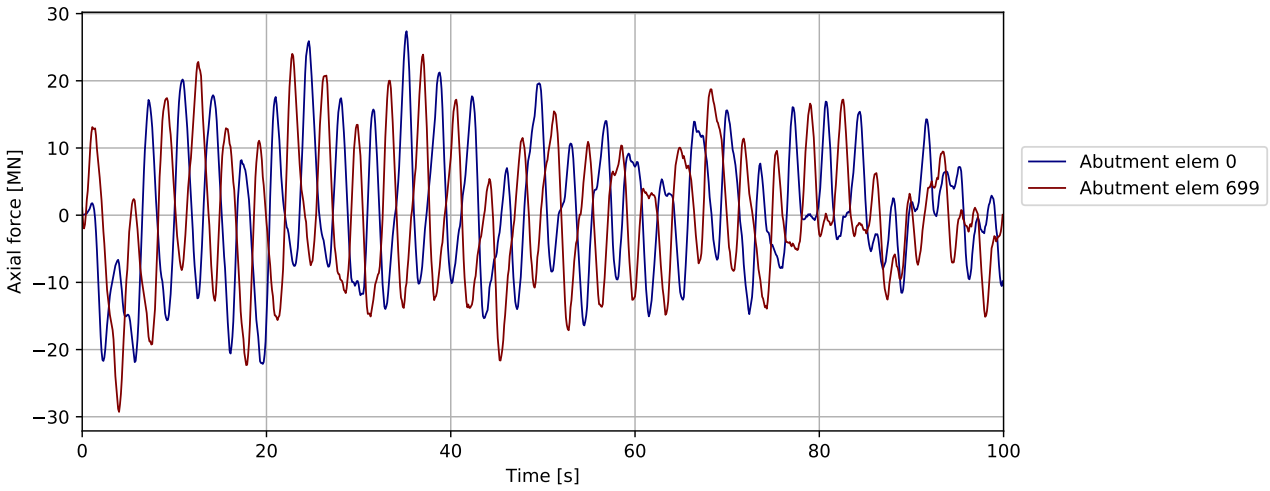

Figure 3.681: P A30 45deg - bridgegirder @abutments: Axial force [MN]

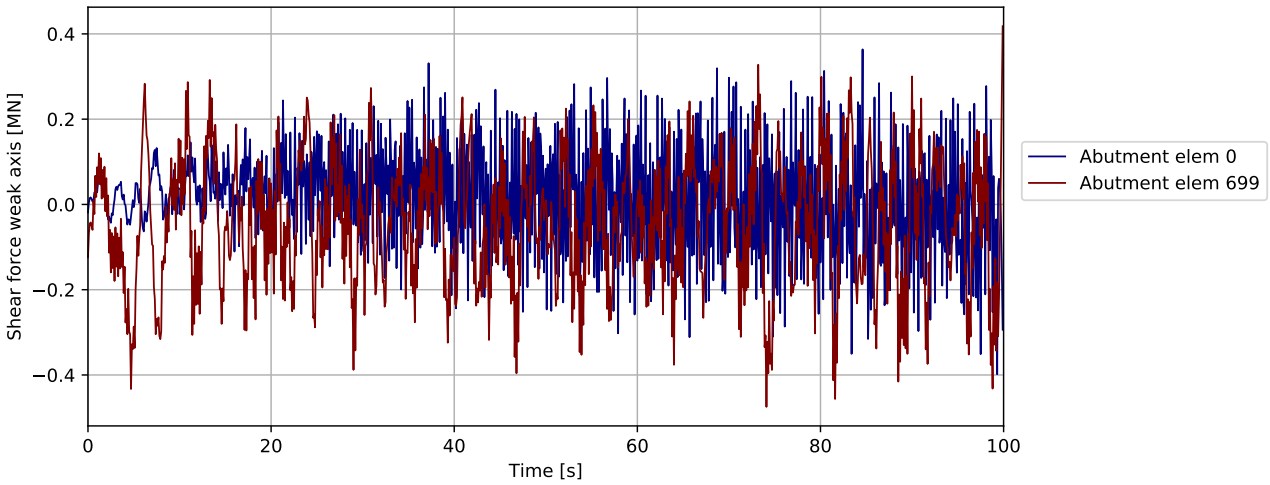

Figure 3.682: P A30 45deg - bridgegirder @abutments: Shear force weak axis [MN]

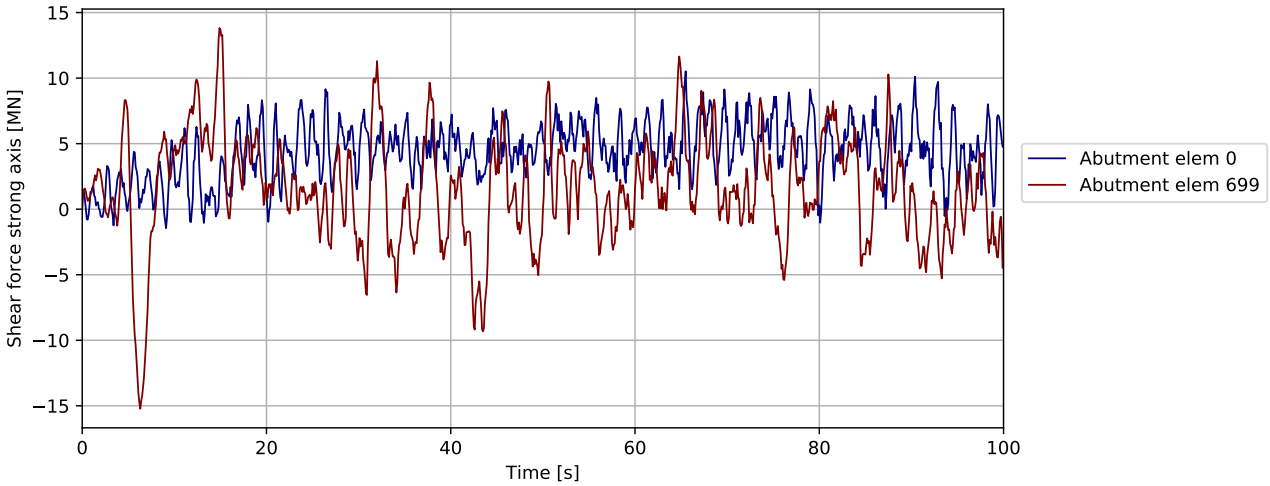

Figure 3.683: P A30 45deg - bridgegirder @abutments: Shear force strong axis [MN]

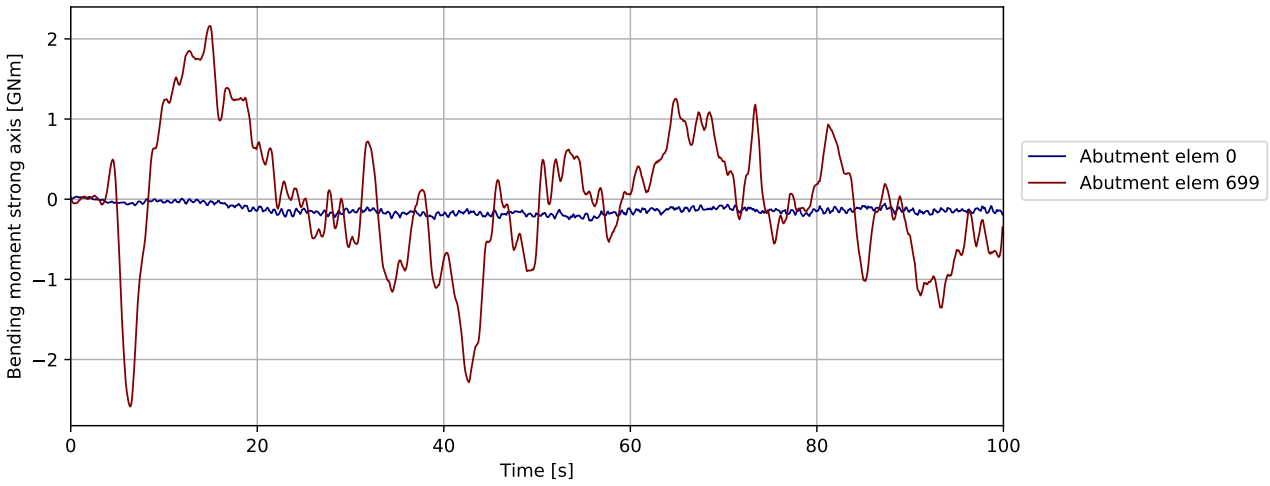

Figure 3.684: P A30 45deg - bridgegirder @abutments: Bending moment strong axis [GNm]

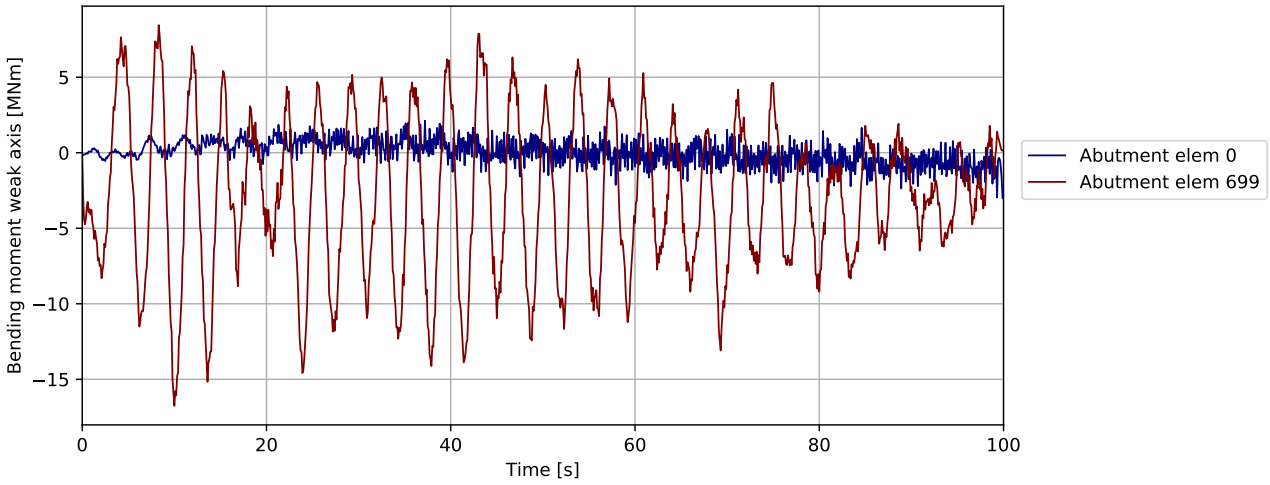

Figure 3.685: P A30 45deg - bridgegirder @abutments: Bending moment weak axis [MNm]

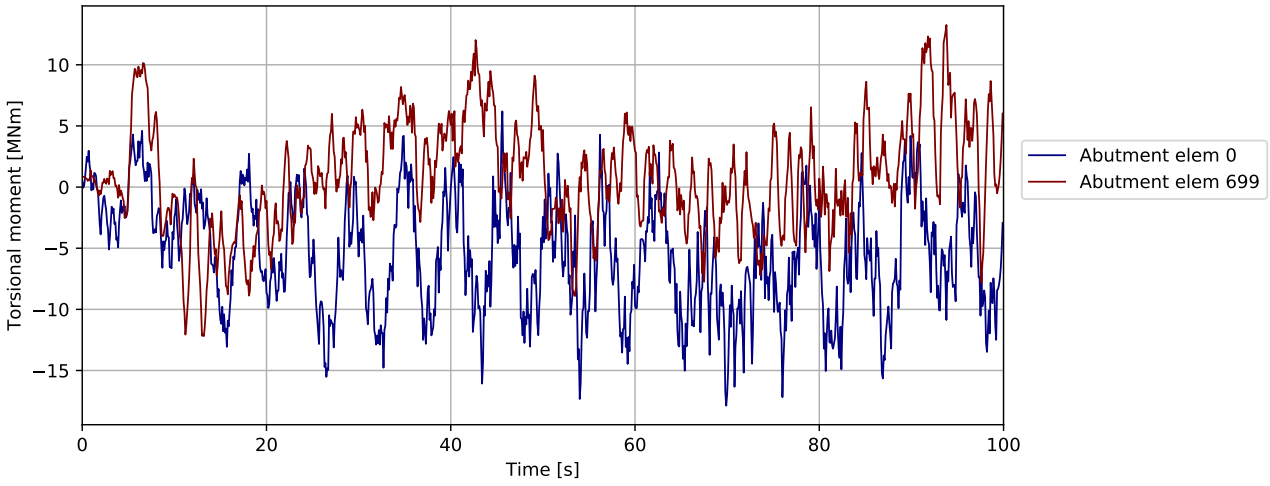

Figure 3.686: P A30 45deg - bridgegirder @abutments: Torsional moment [MNm]

Note : Compressive spring force is negative

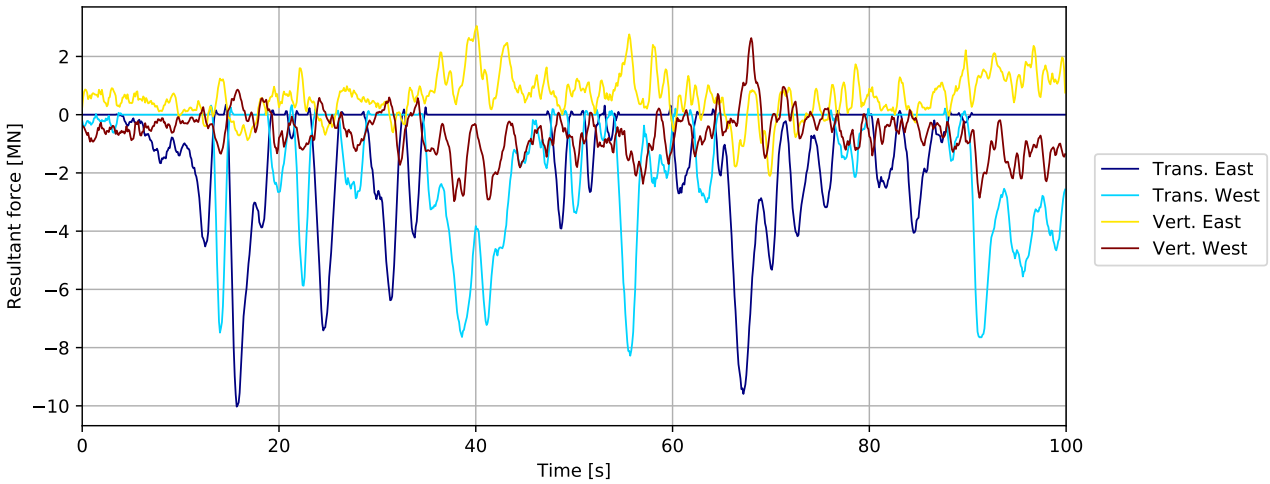

Figure 3.687: P A30 45deg - bridgegirder supports in tower: Resultant force [MN]

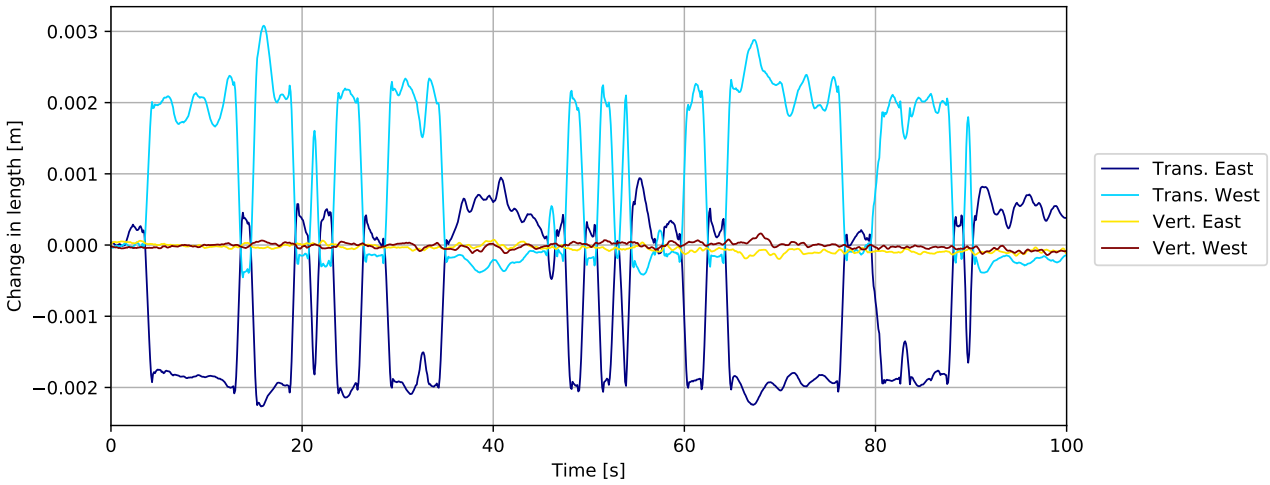

Figure 3.688: P A30 45deg - bridgegirder supports in tower: Change in length [m]

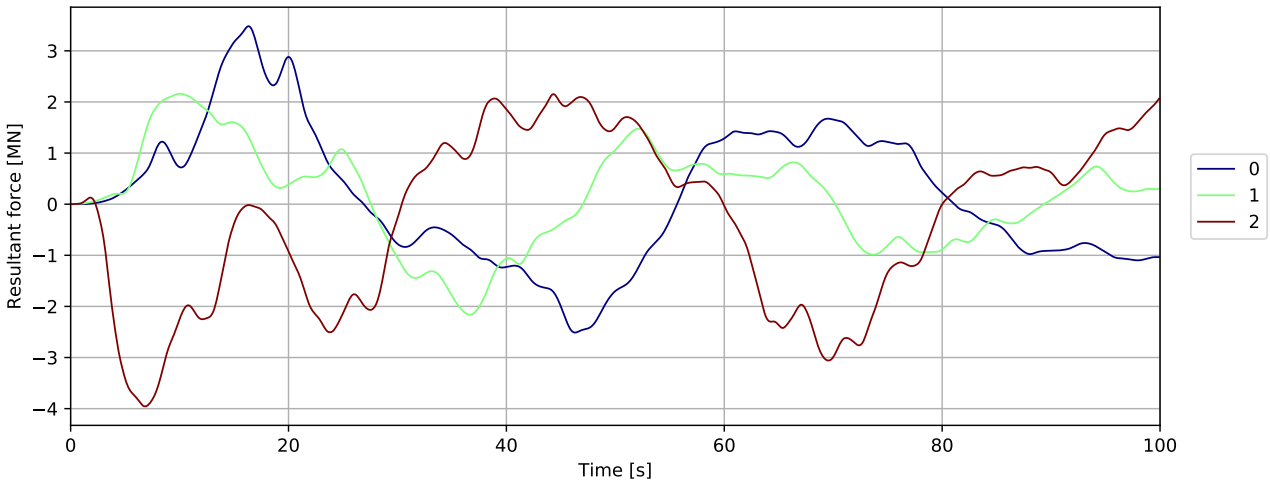

Figure 3.689: Mooring force

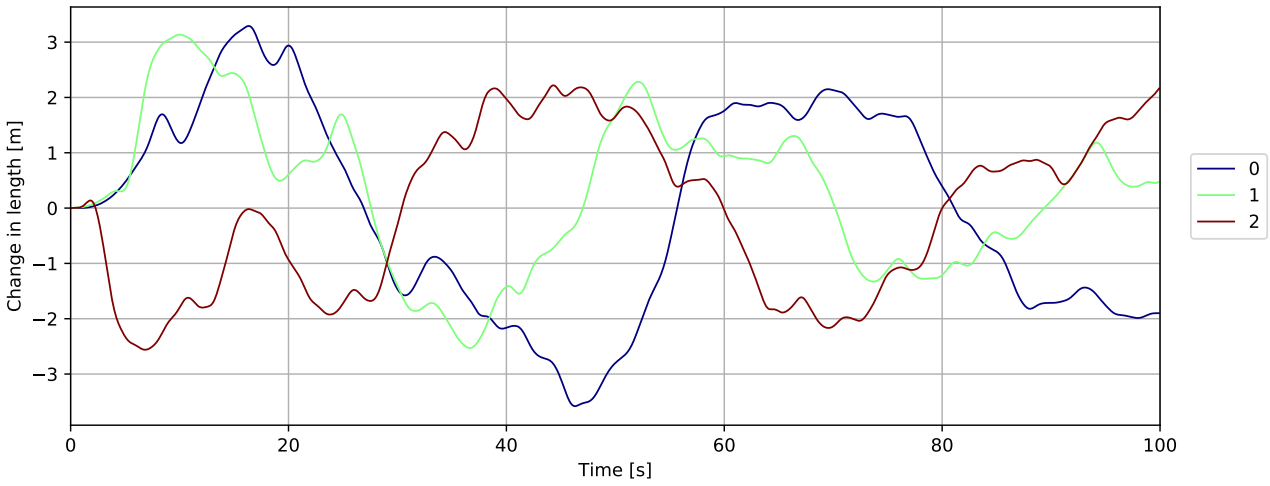

Figure 3.690: Mooring displacement

3.16 PontoonA38 45deg

3.16.1 Overall response

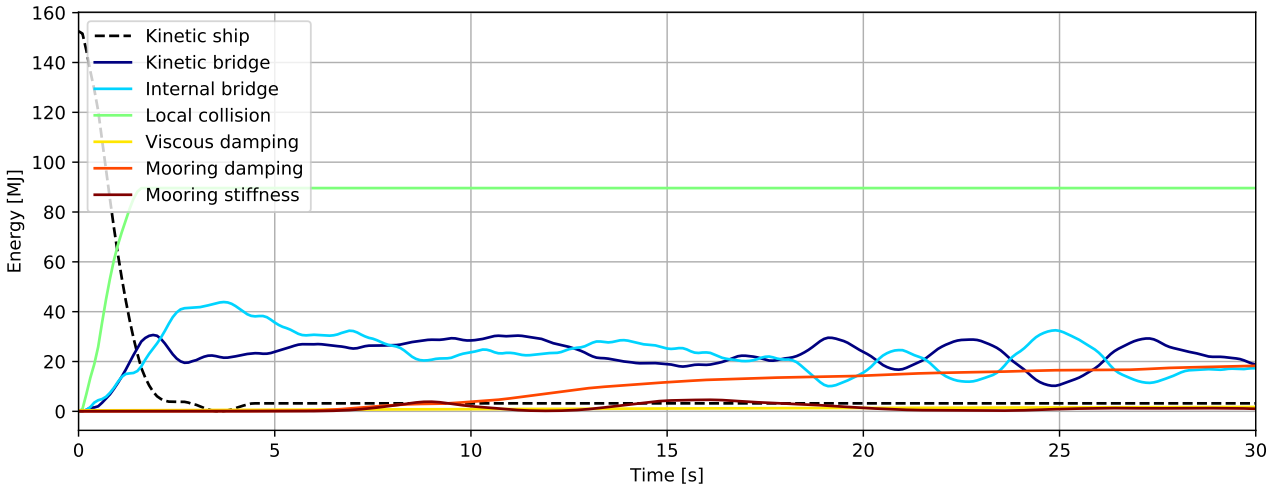

Figure 3.691: Energy [MJ] - initial phase

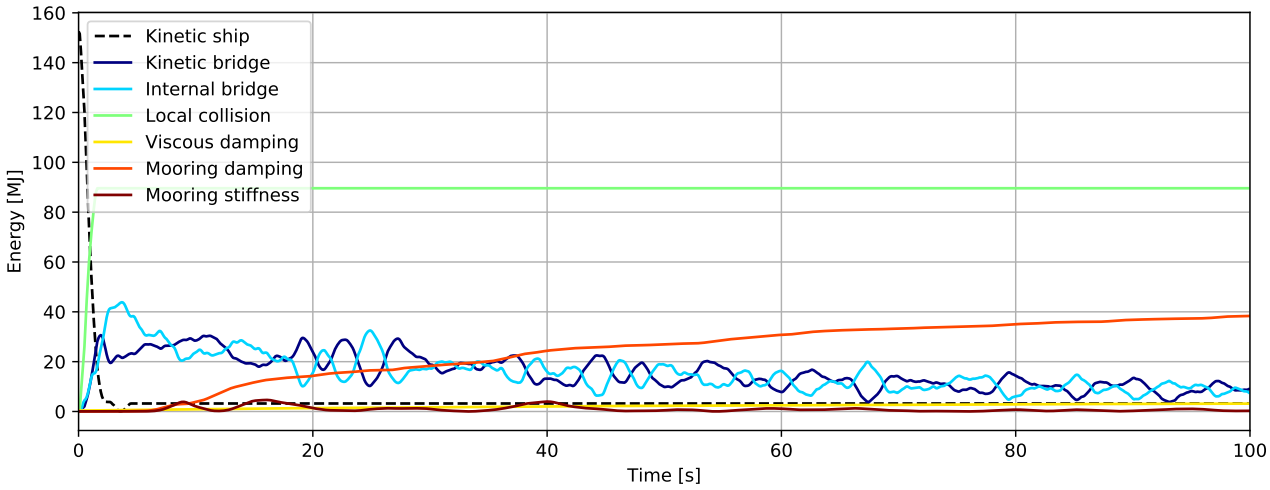

Figure 3.692: Energy [MJ]

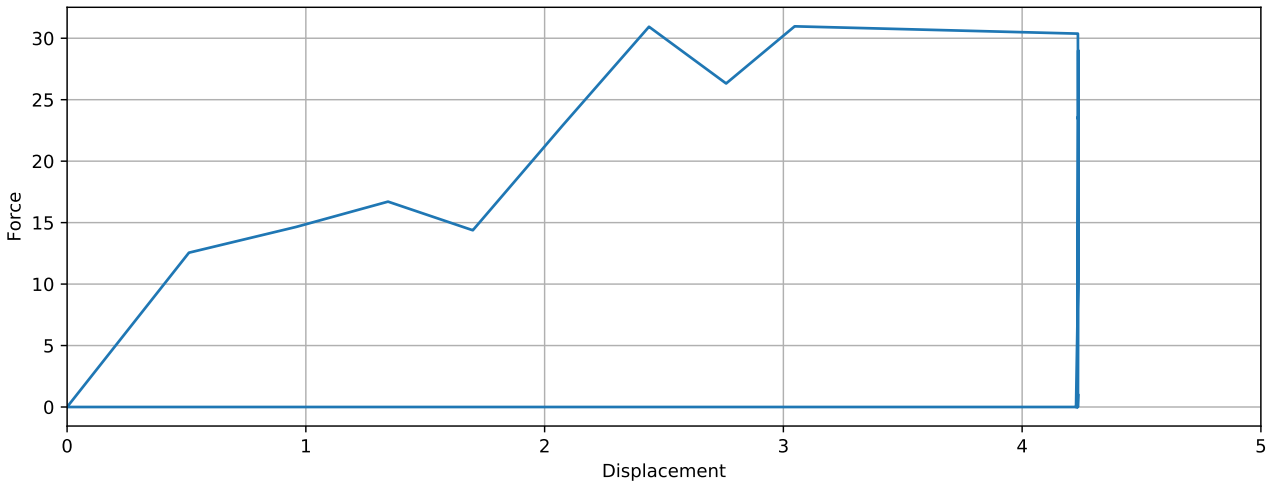

Figure 3.693: Simulated local collision force-displacement

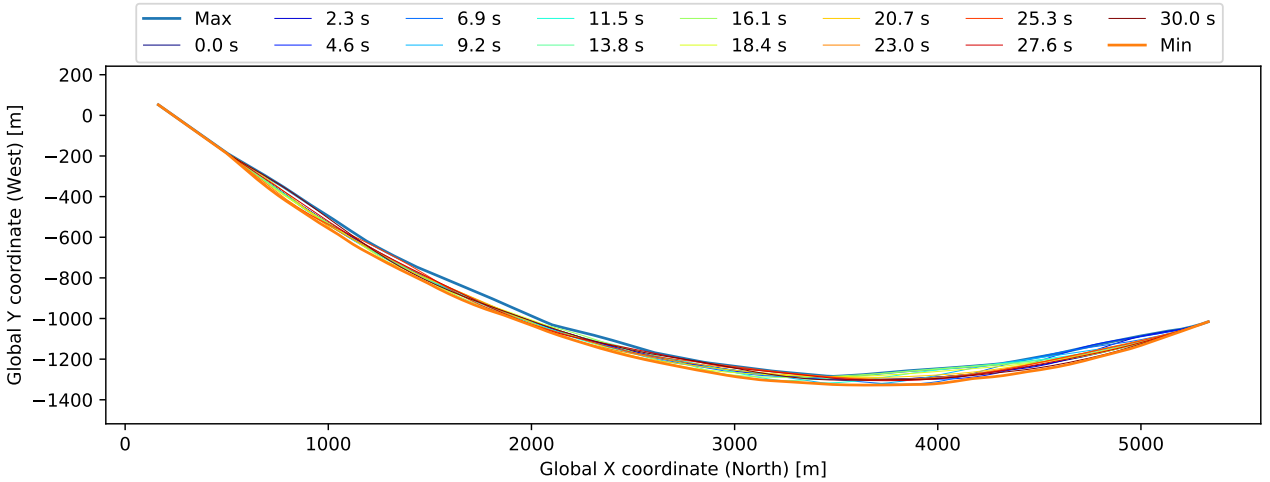

Figure 3.694: Bridgegirder deflection (10x displacment scaling)

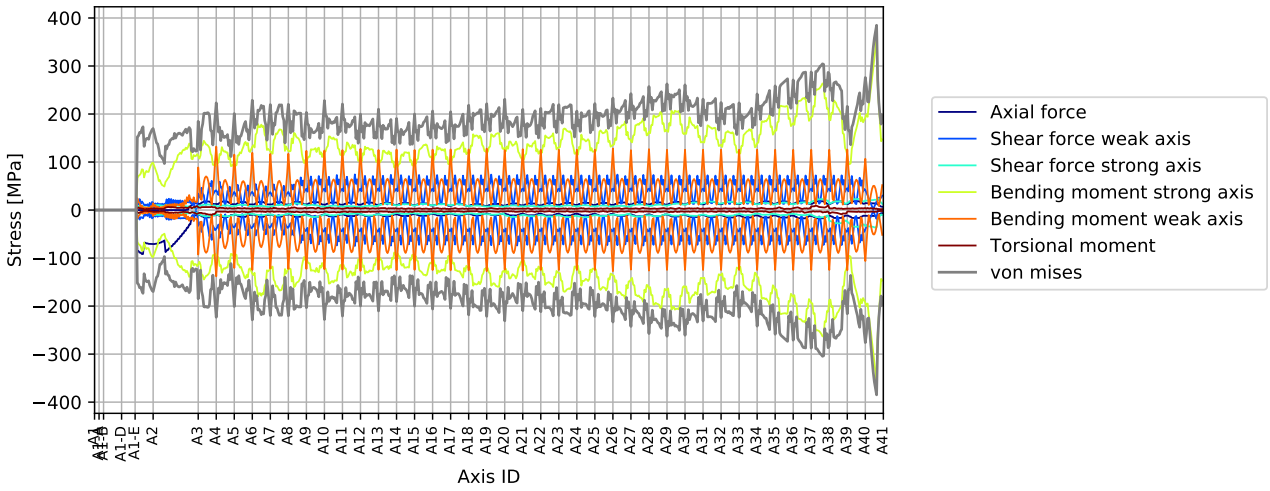

Figure 3.695: Stress envelope from all force components

3.16.2 Envelope plots

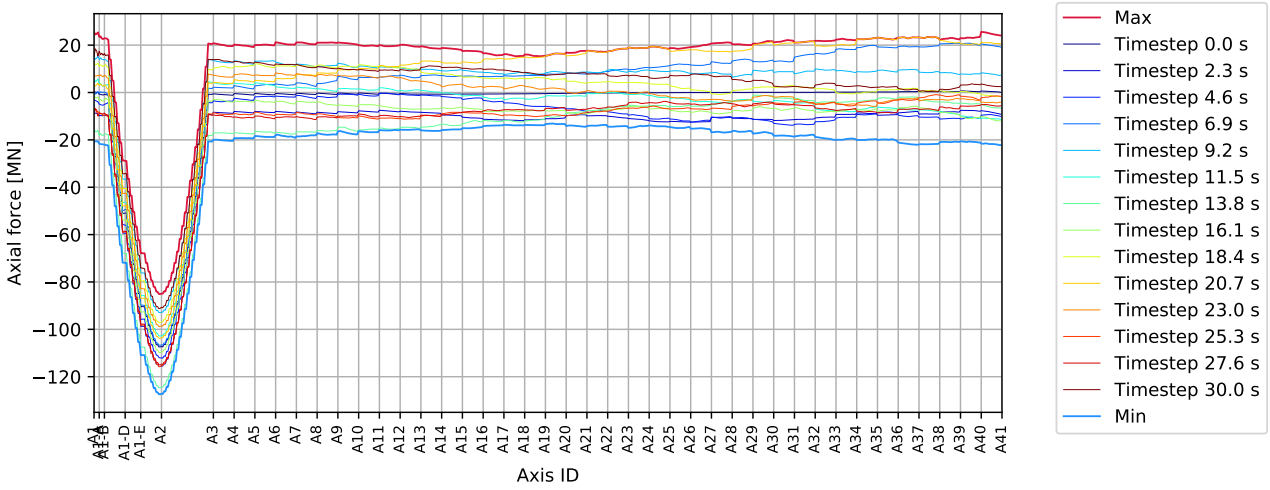

Figure 3.696: P A38 45deg - bridgegirder : Axial force [MN]

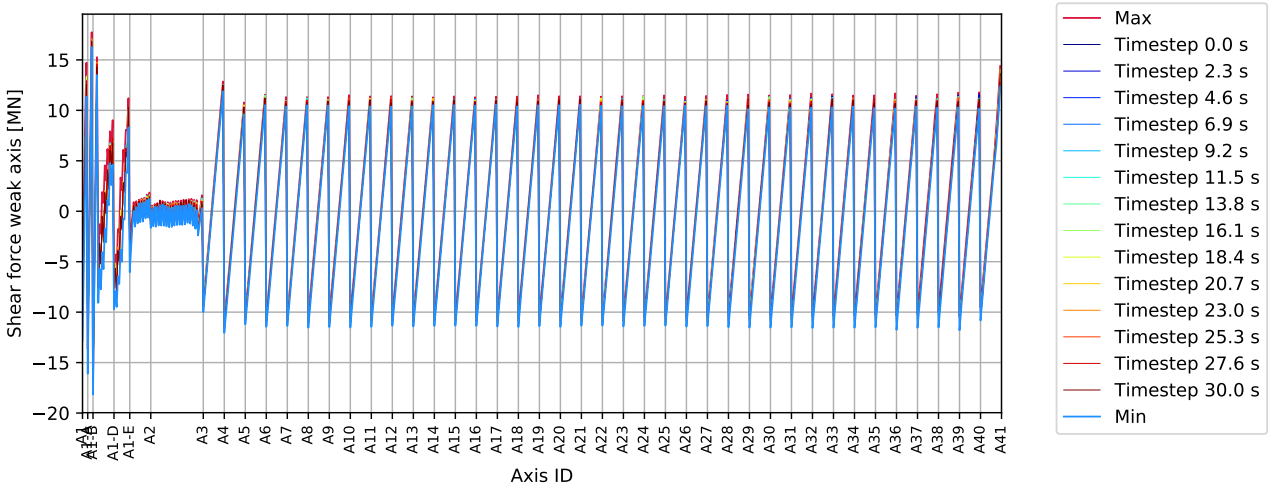

Figure 3.697: P A38 45deg - bridgegirder : Shear force weak axis [MN]

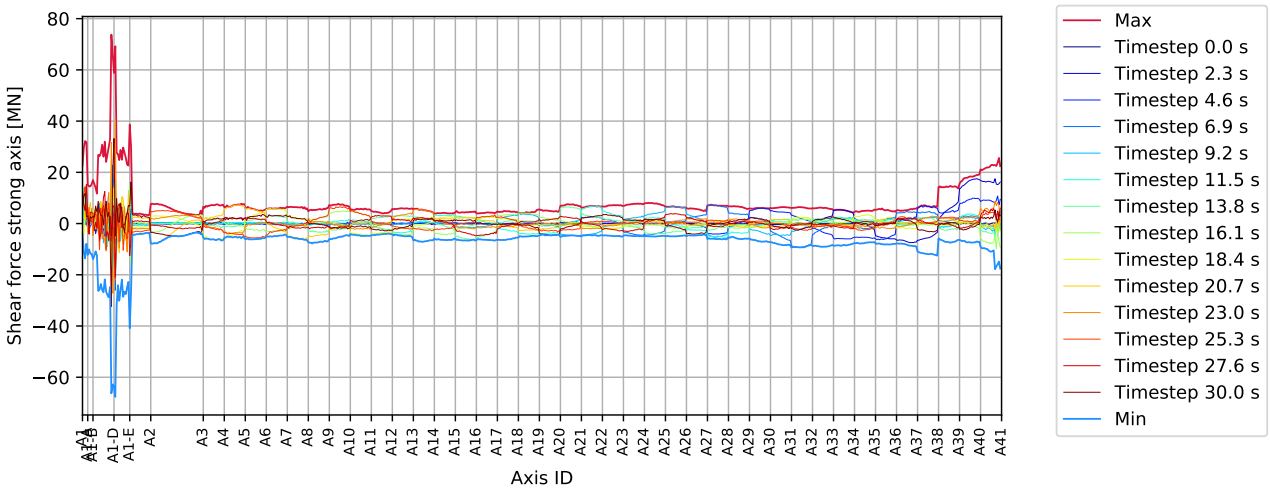

Figure 3.698: P A38 45deg - bridgegirder : Shear force strong axis [MN]

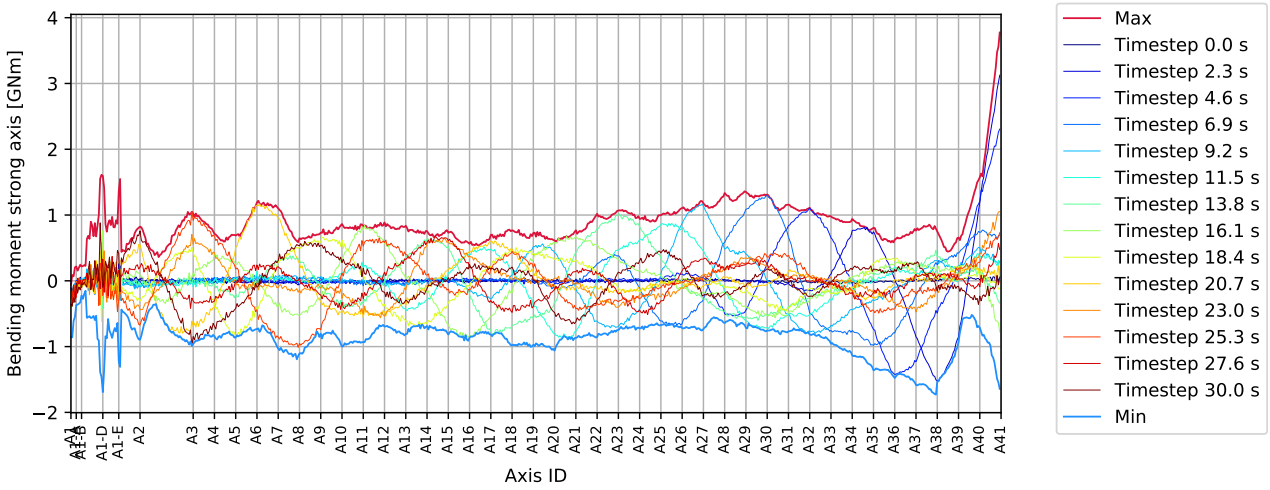

Figure 3.699: P A38 45deg - bridgegirder : Bending moment strong axis [GNm]

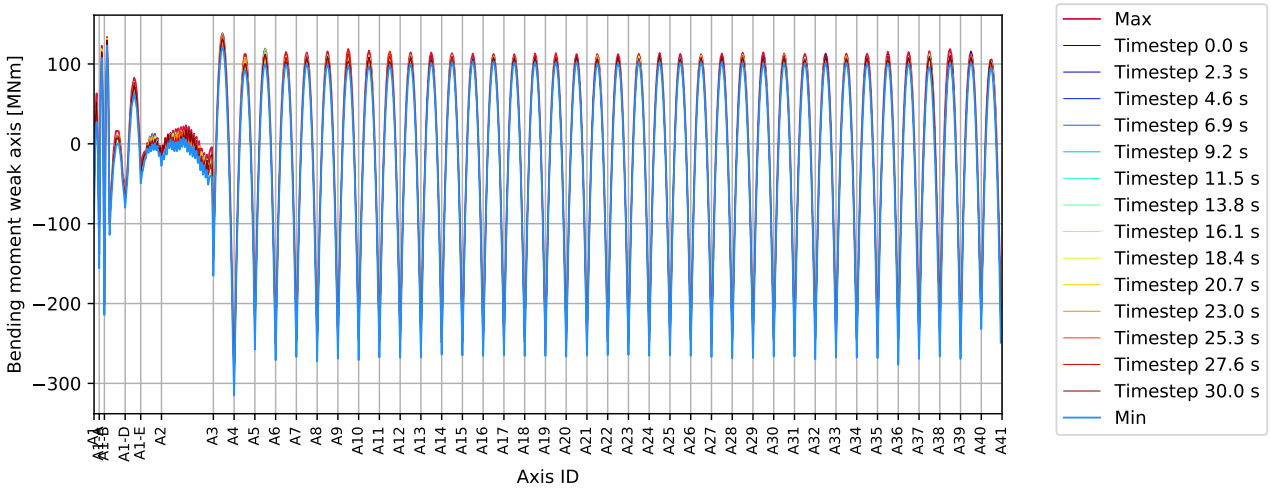

Figure 3.700: P A38 45deg - bridgegirder : Bending moment weak axis [MNm]

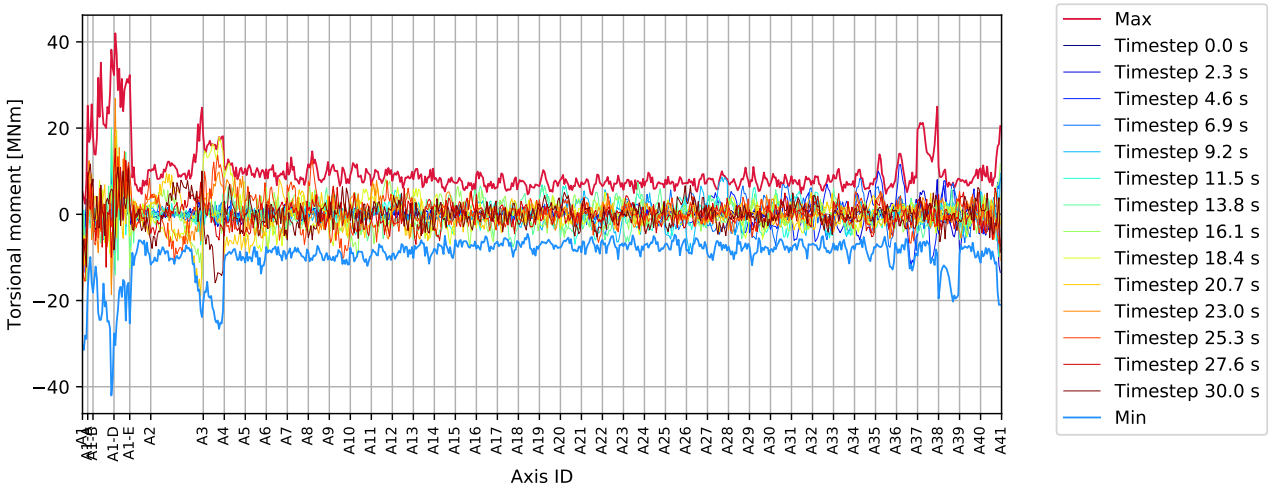

Figure 3.701: P A38 45deg - bridgegirder : Torsional moment [MNm]

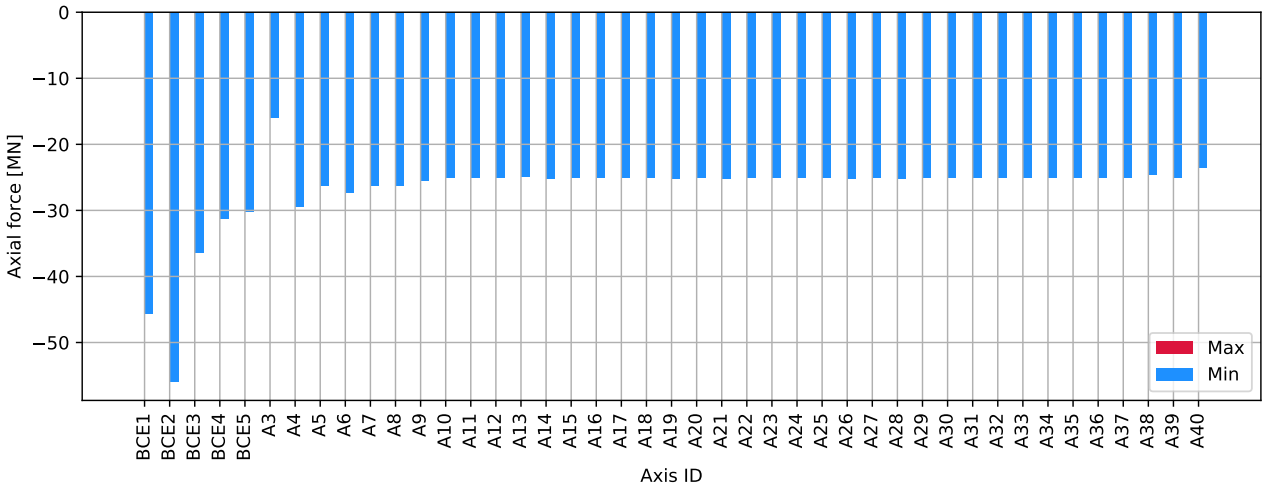

Figure 3.702: P A38 45deg - columns bottom : Axial force [MN]

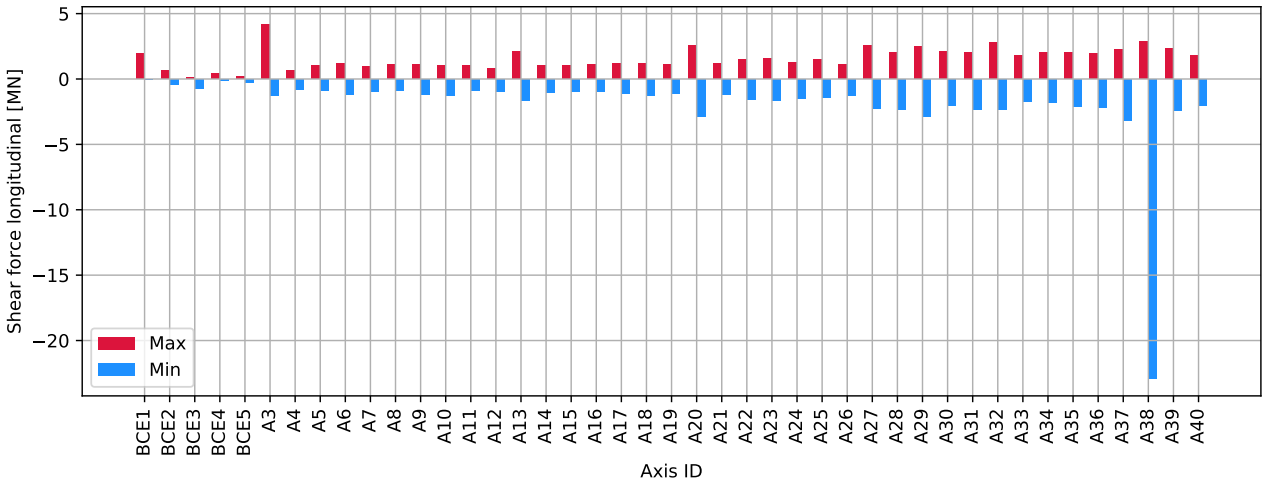

Figure 3.703: P A38 45deg - columns bottom : Shear force longitudinal [MN]

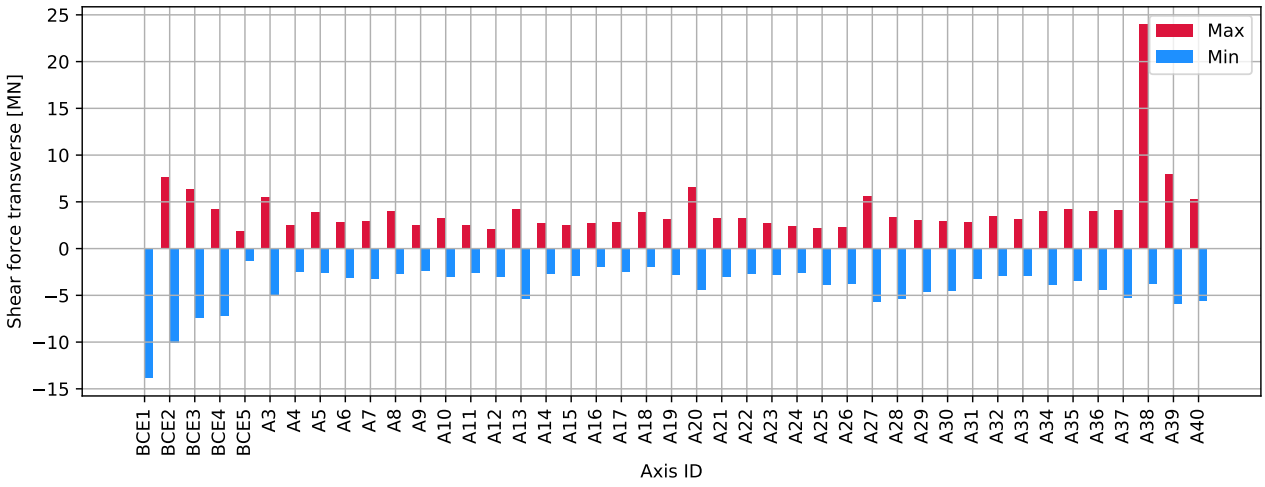

Figure 3.704: P A38 45deg - columns bottom : Shear force transverse [MN]

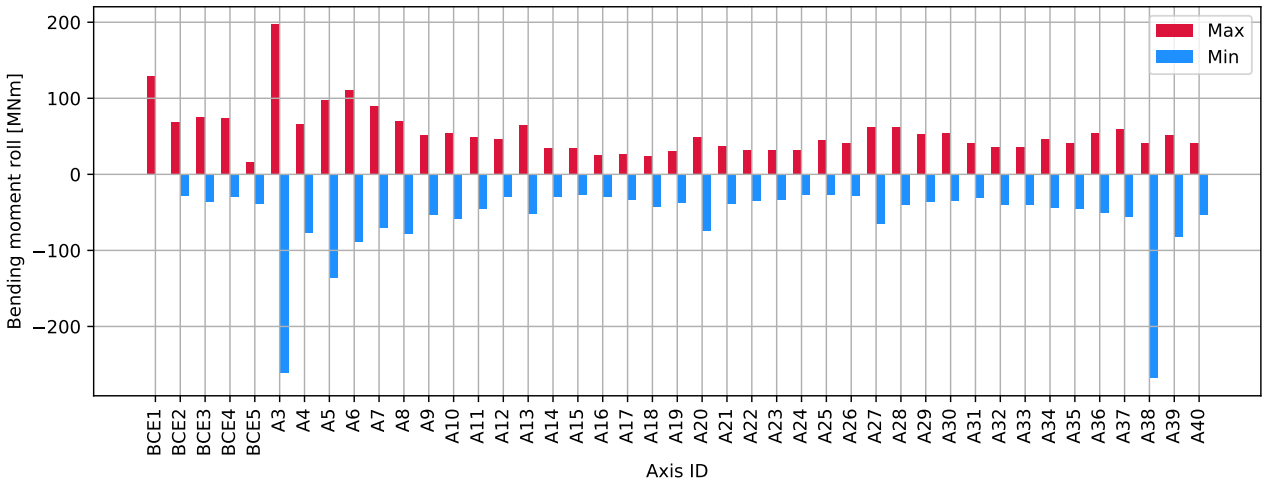

Figure 3.705: P A38 45deg - columns bottom : Bending moment roll [MNm]

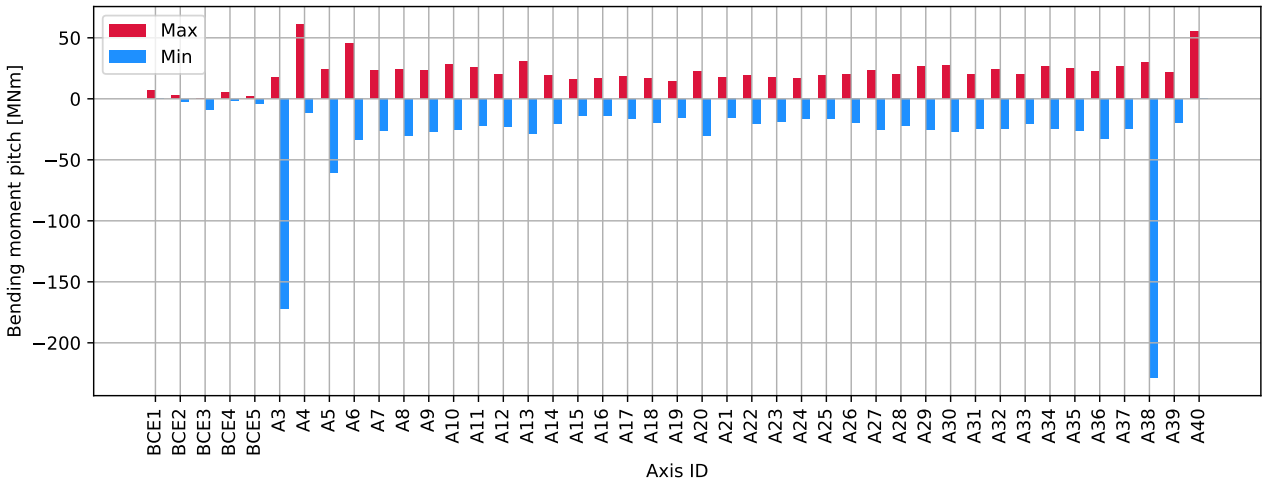

Figure 3.706: P A38 45deg - columns bottom : Bending moment pitch [MNm]

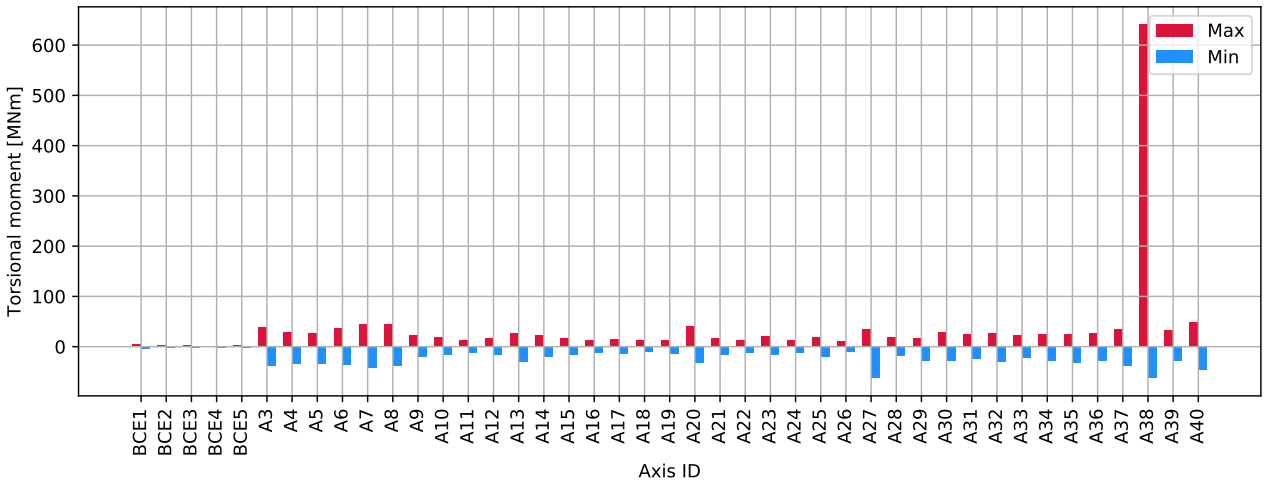

Figure 3.707: P A38 45deg - columns bottom : Torsional moment [MNm]

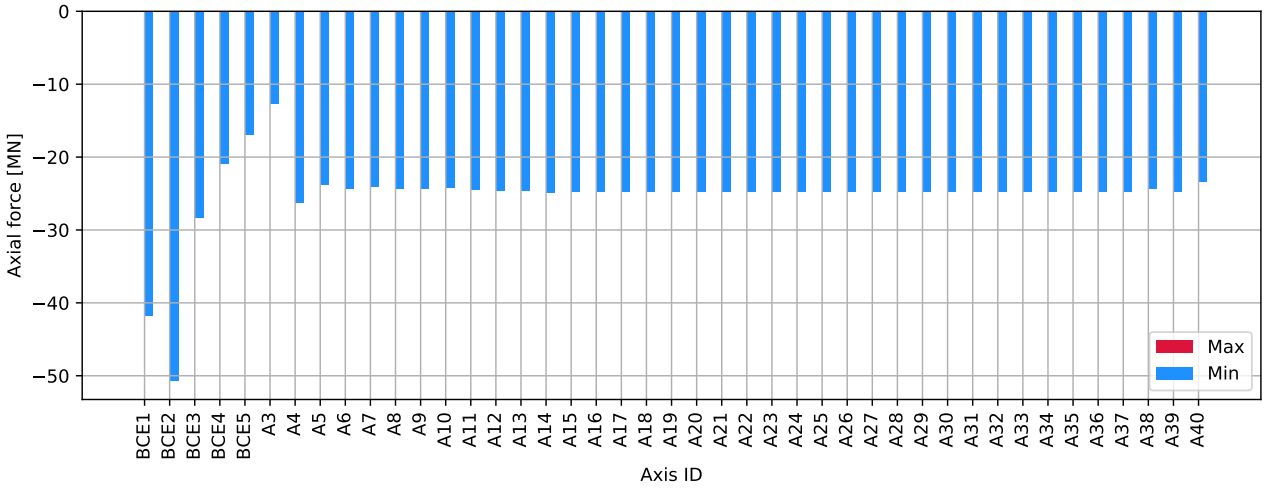

Figure 3.708: P A38 45deg - columns top : Axial force [MN]

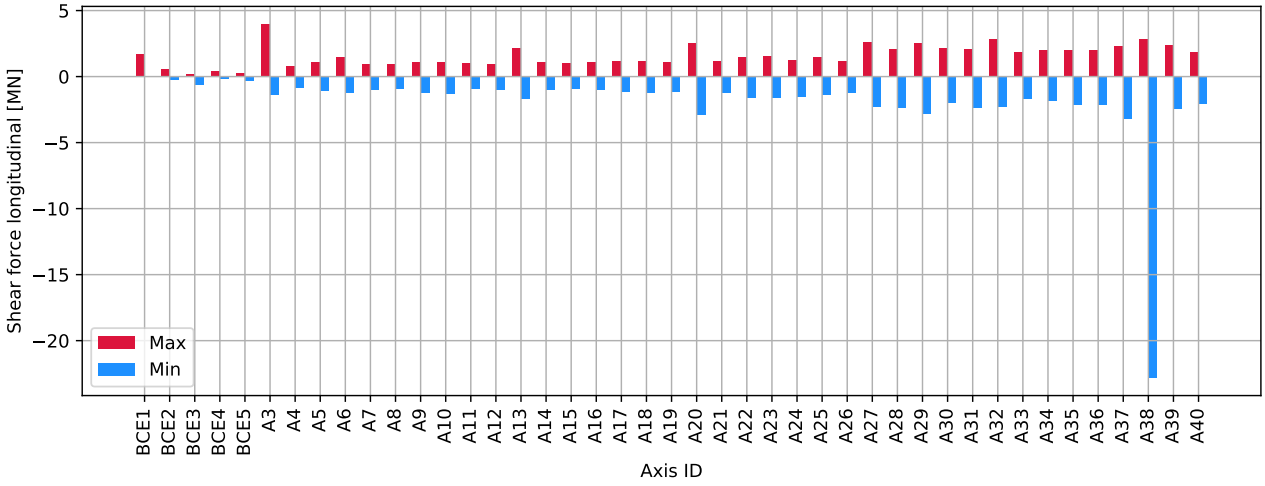

Figure 3.709: P A38 45deg - columns top : Shear force longitudinal [MN]

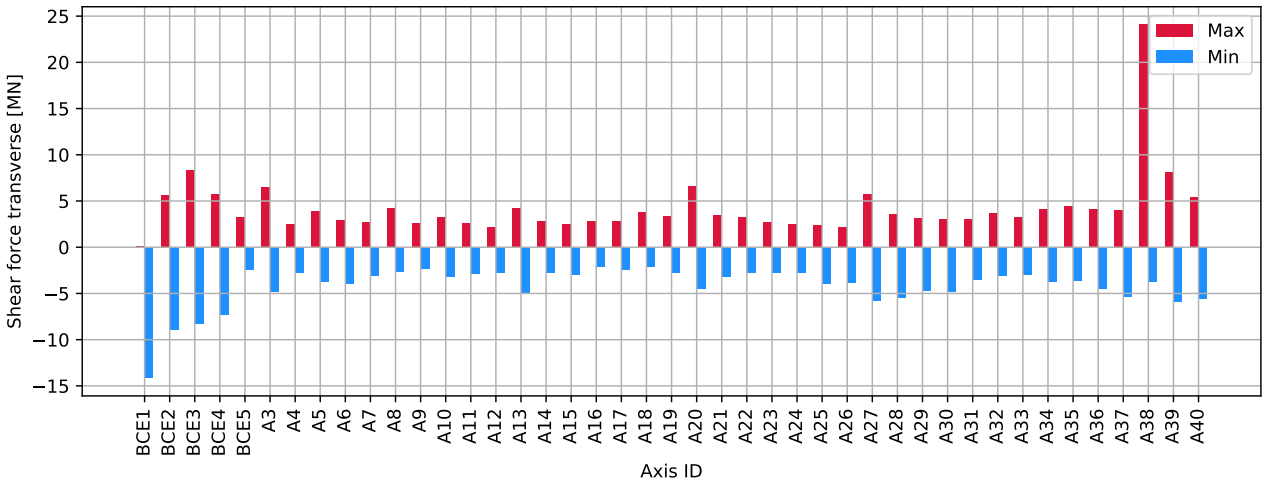

Figure 3.710: P A38 45deg - columns top : Shear force transverse [MN]

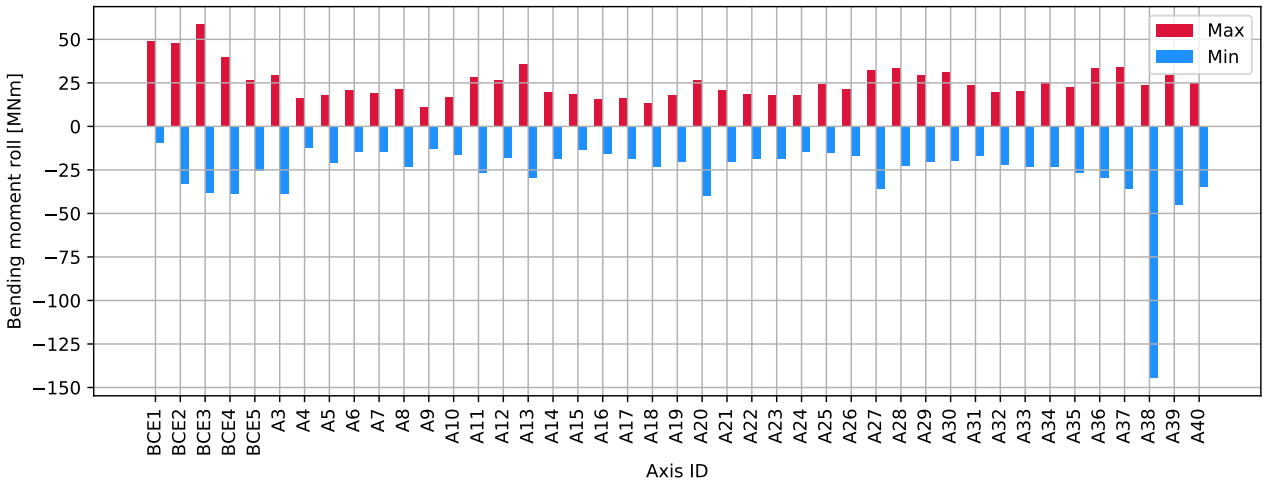

Figure 3.711: P A38 45deg - columns top : Bending moment roll [MNm]

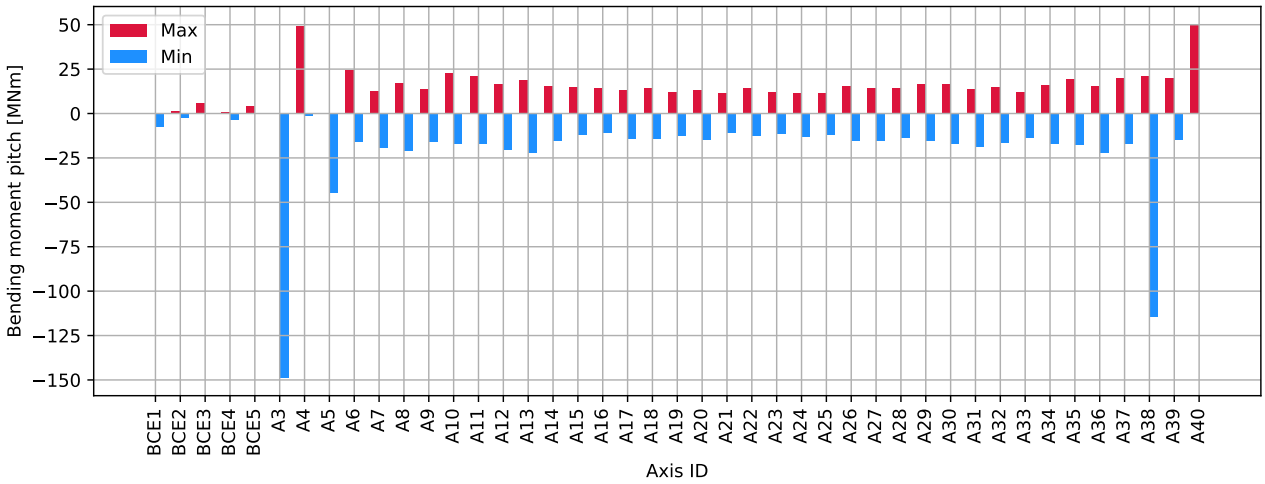

Figure 3.712: P A38 45deg - columns top : Bending moment pitch [MNm]

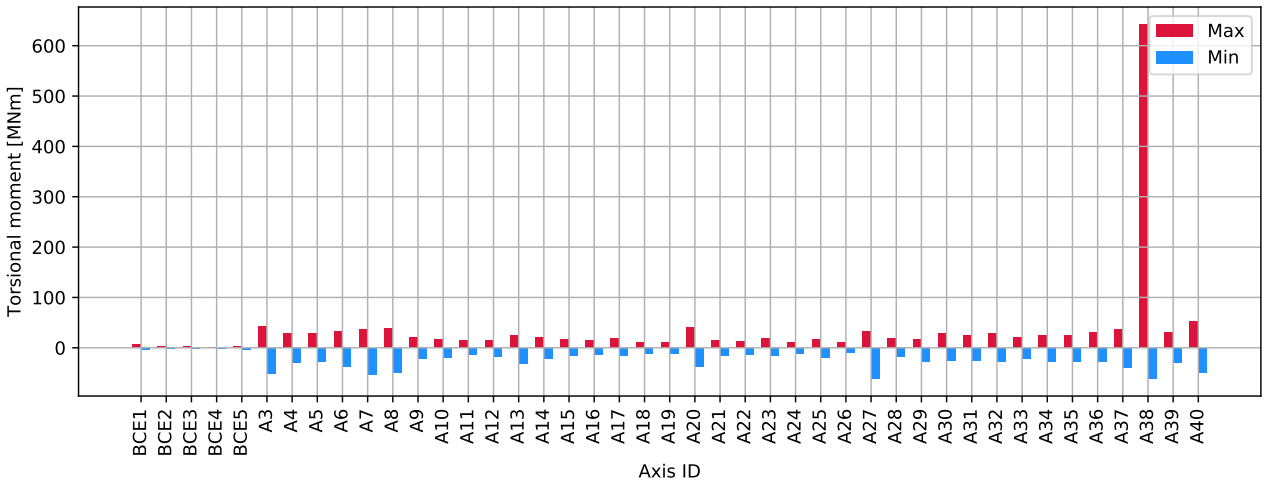

Figure 3.713: P A38 45deg - columns top : Torsional moment [MNm]

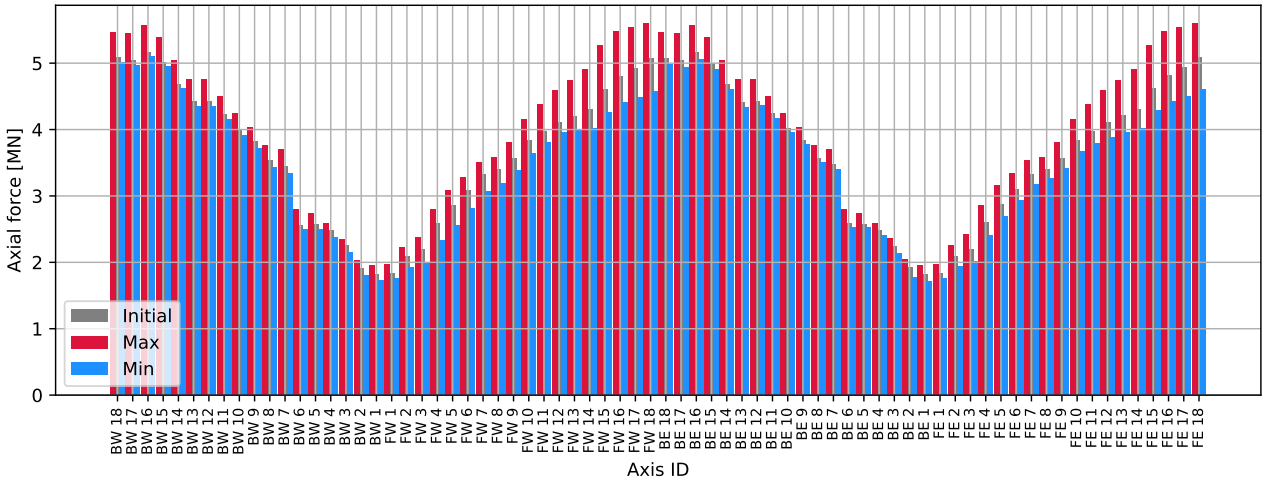

Figure 3.714: P A38 45deg - cables : Axial force [MN]

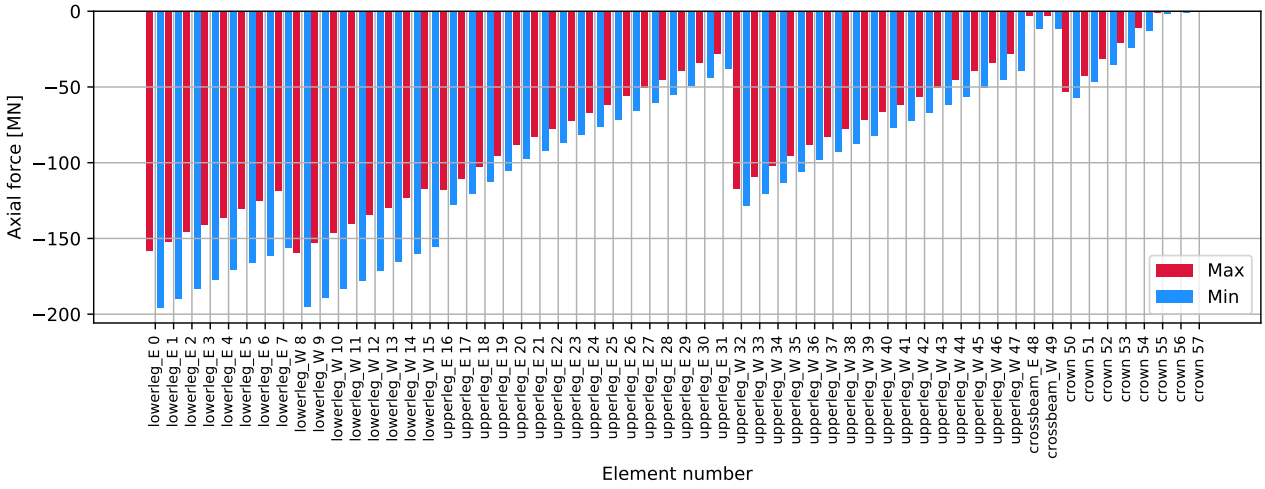

Figure 3.715: P A38 45deg - tower: Axial force [MN]

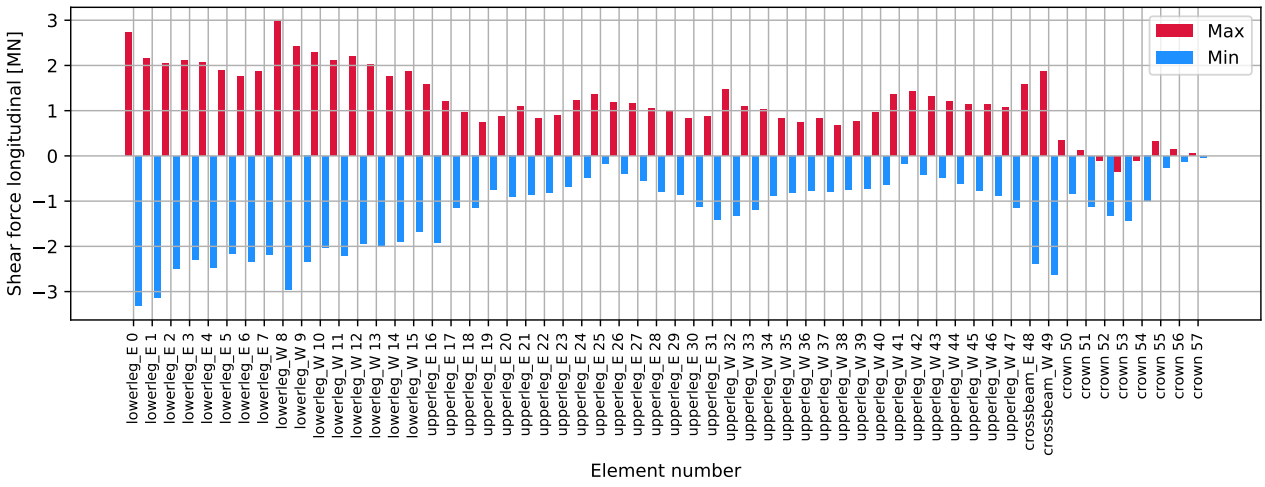

Figure 3.716: P A38 45deg - tower: Shear force longitudinal [MN]

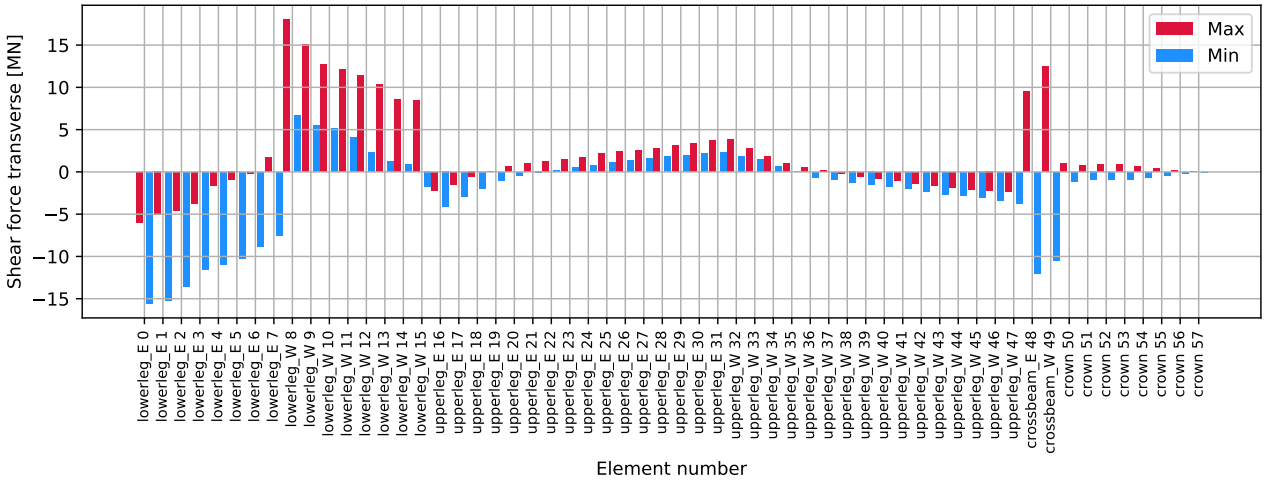

Figure 3.717: P A38 45deg - tower: Shear force transverse [MN]

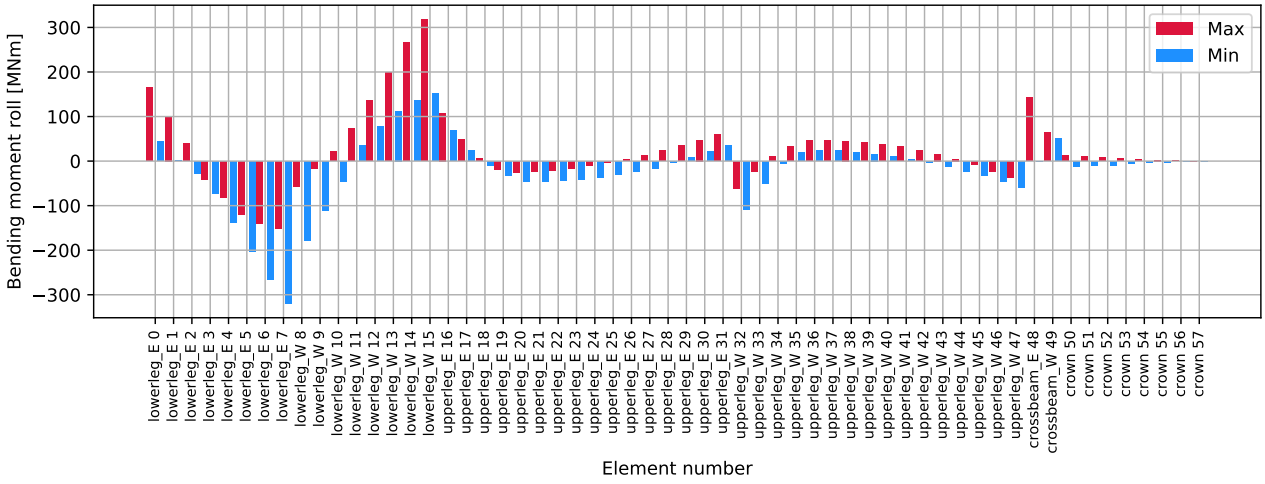

Figure 3.718: P A38 45deg - tower: Bending moment roll [MNm]

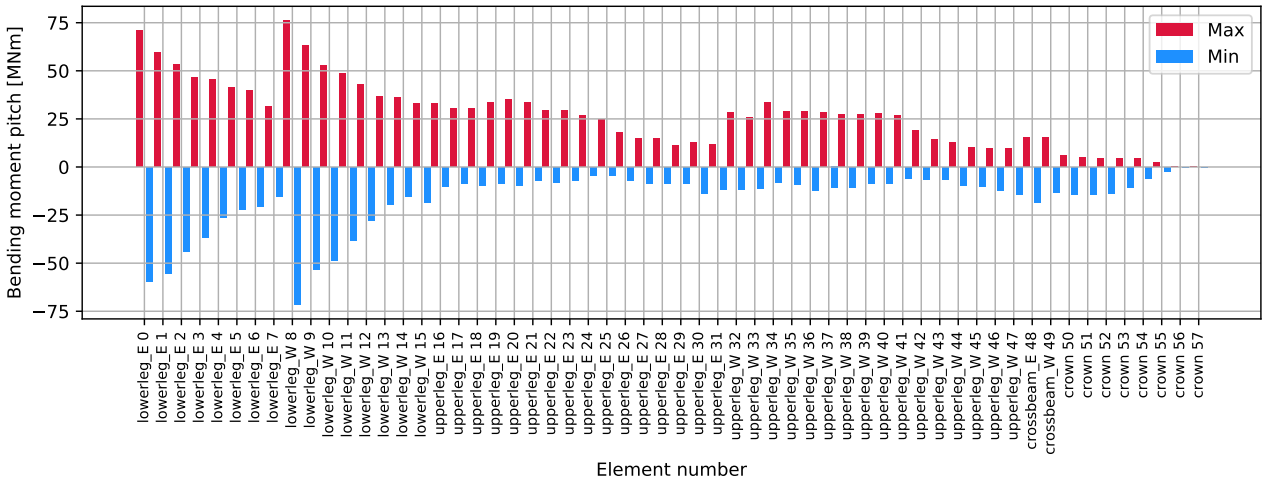

Figure 3.719: P A38 45deg - tower: Bending moment pitch [MNm]

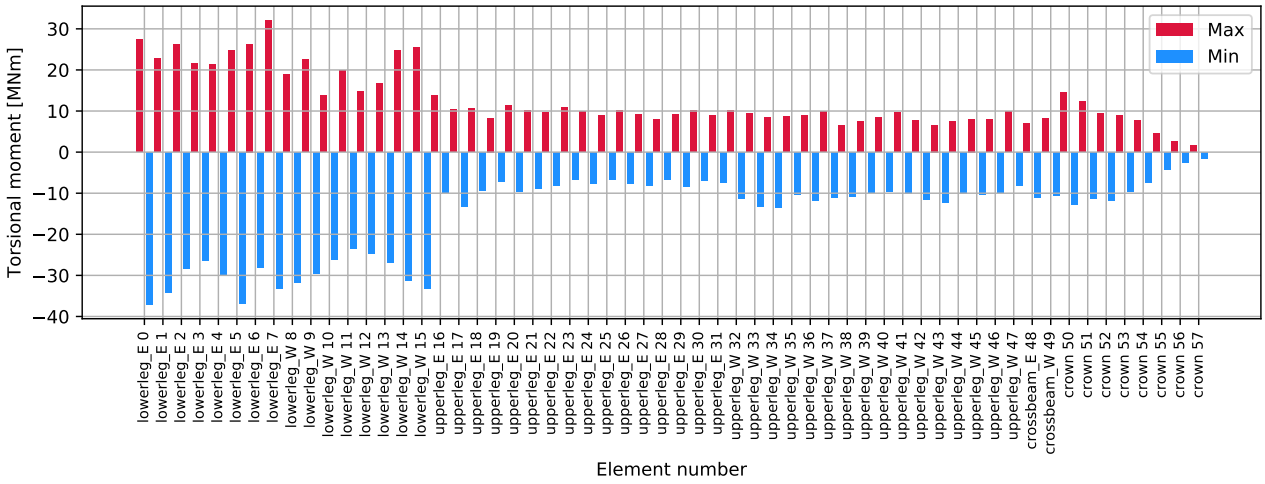

Figure 3.720: P A38 45deg - tower: Torsional moment [MNm]

3.16.3 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

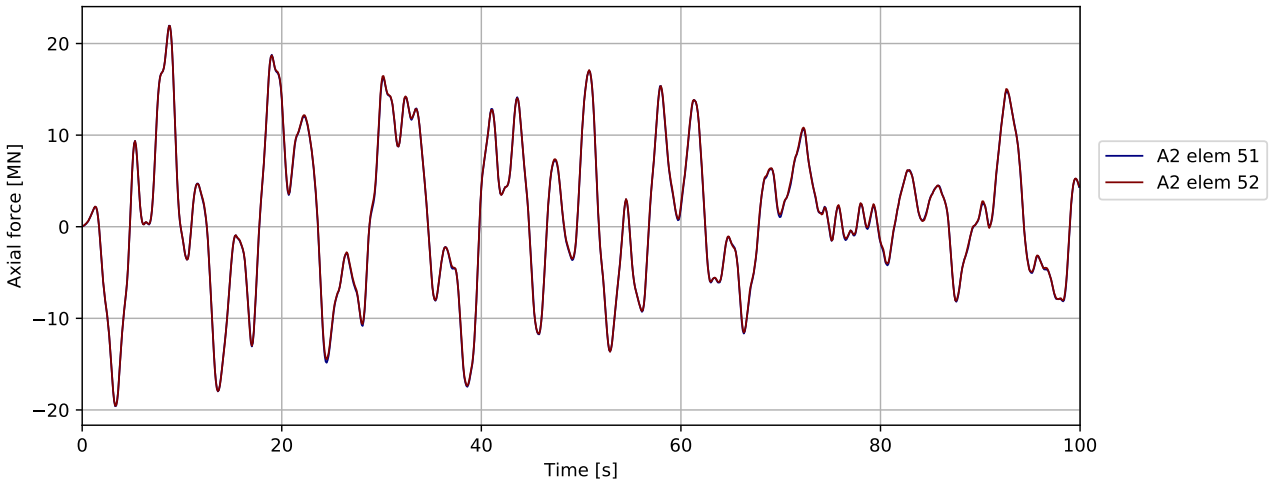

Figure 3.721: P A38 45deg - bridgegirder @ pylon: Axial force [MN]

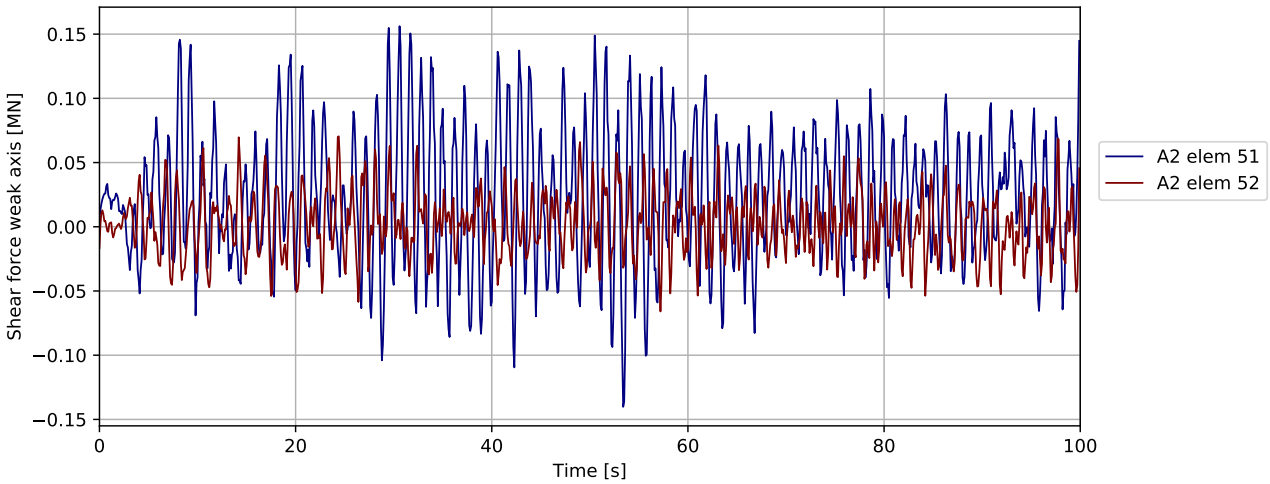

Figure 3.722: P A38 45deg - bridgegirder @ pylon: Shear force weak axis [MN]

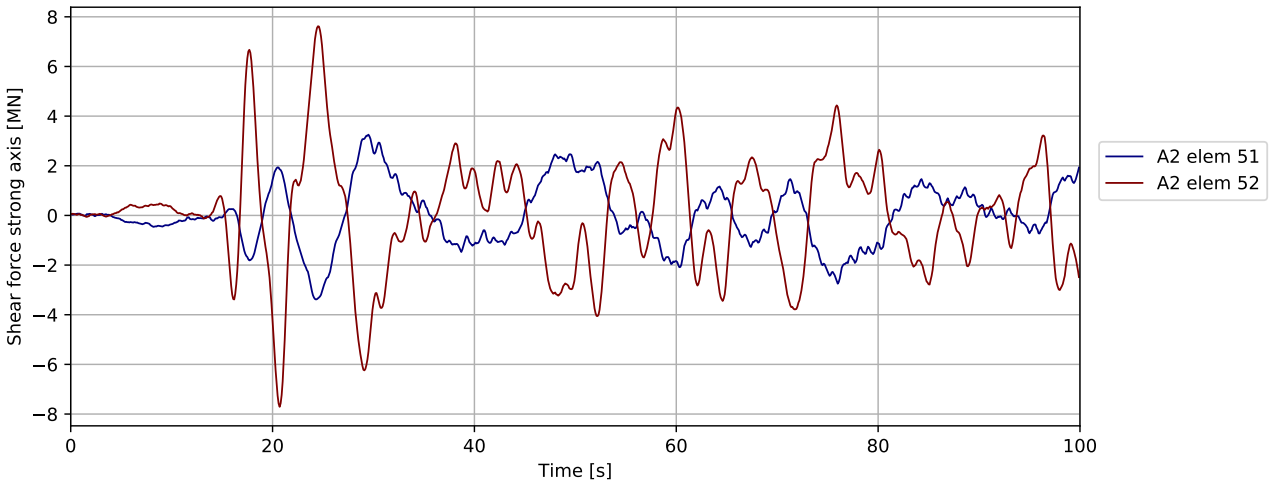

Figure 3.723: P A38 45deg - bridgegirder @ pylon: Shear force strong axis [MN]

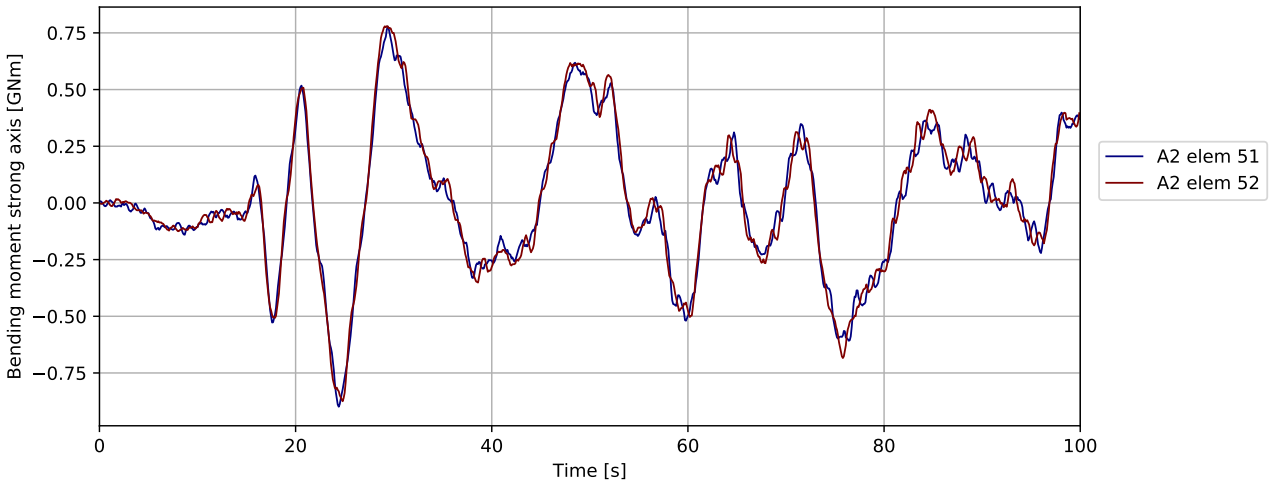

Figure 3.724: P A38 45deg - bridgegirder @ pylon: Bending moment strong axis [GNm]

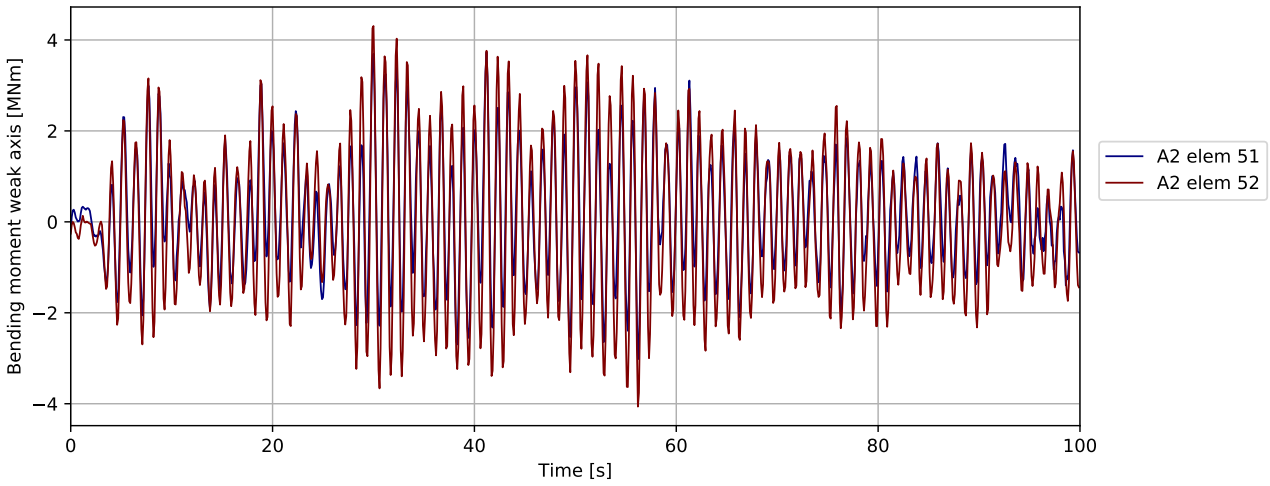

Figure 3.725: P A38 45deg - bridgegirder @ pylon: Bending moment weak axis [MNm]

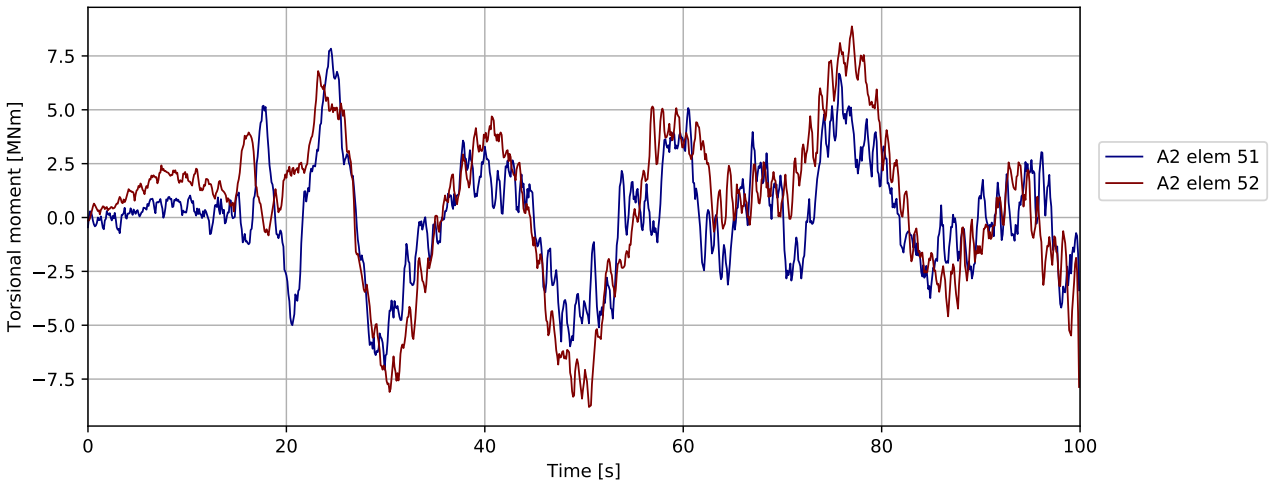

Figure 3.726: P A38 45deg - bridgegirder @ pylon: Torsional moment [MNm]

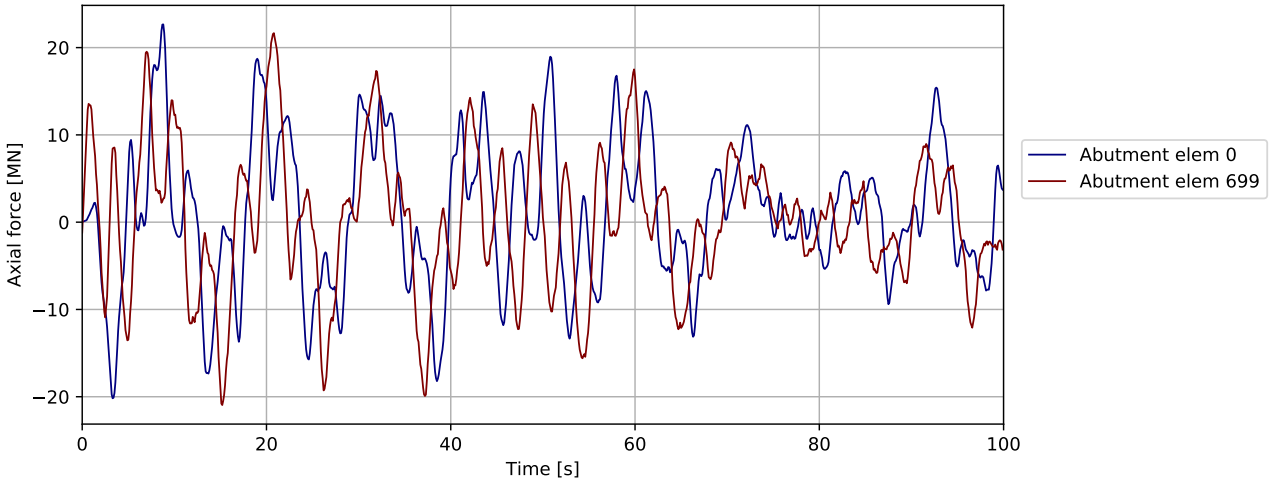

Figure 3.727: P A38 45deg - bridgegirder @abutments: Axial force [MN]

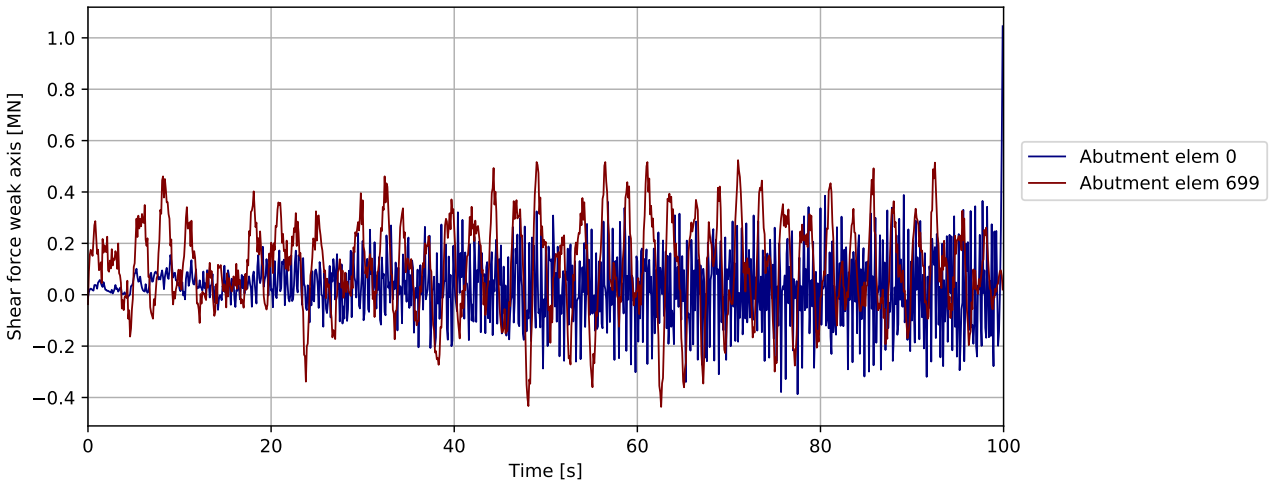

Figure 3.728: P A38 45deg - bridgegirder @abutments: Shear force weak axis [MN]

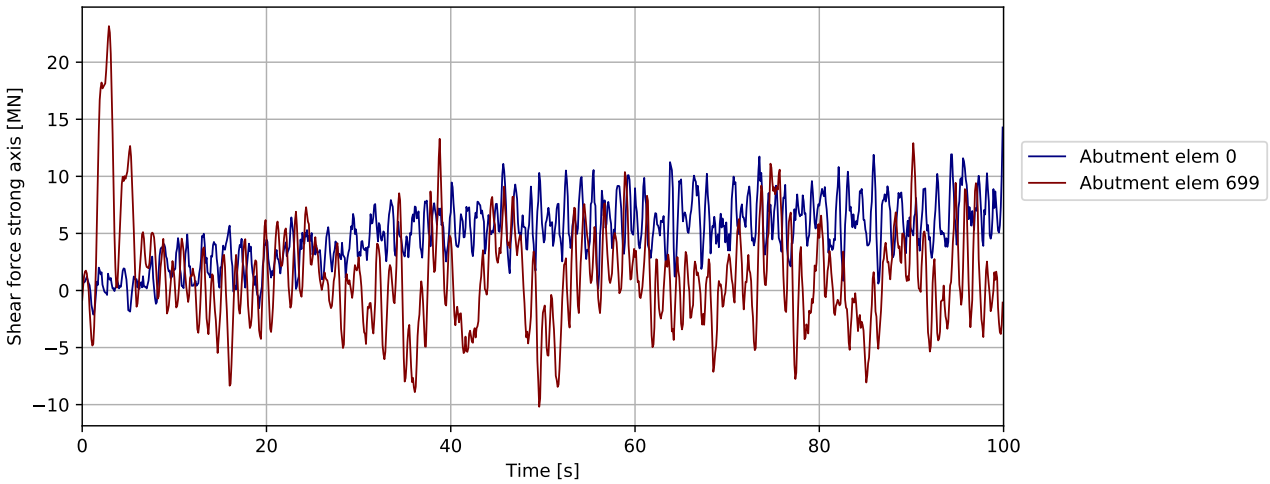

Figure 3.729: P A38 45deg - bridgegirder @abutments: Shear force strong axis [MN]

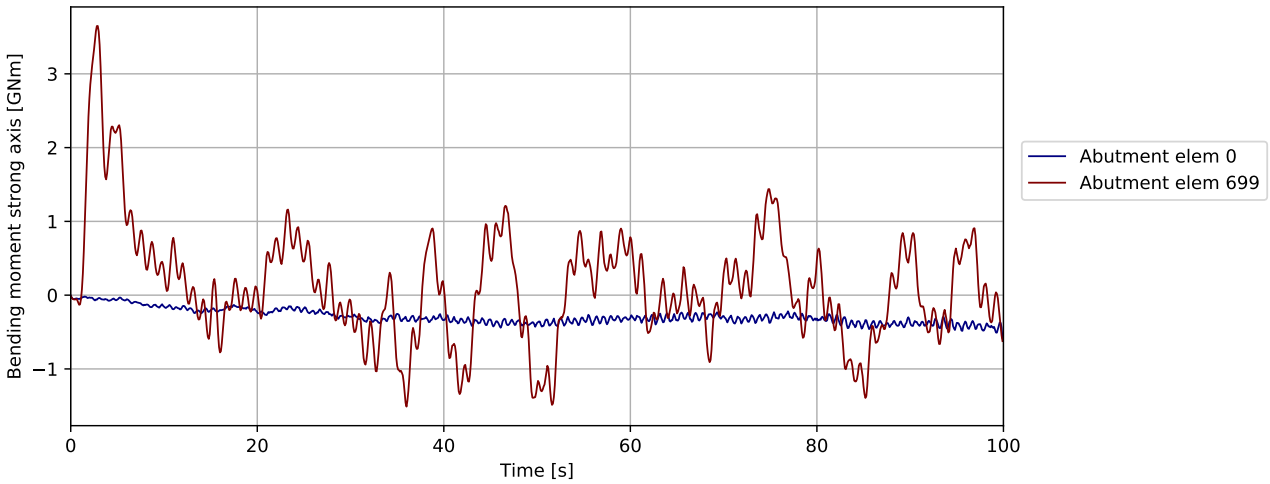

Figure 3.730: P A38 45deg - bridgegirder @abutments: Bending moment strong axis [GNm]

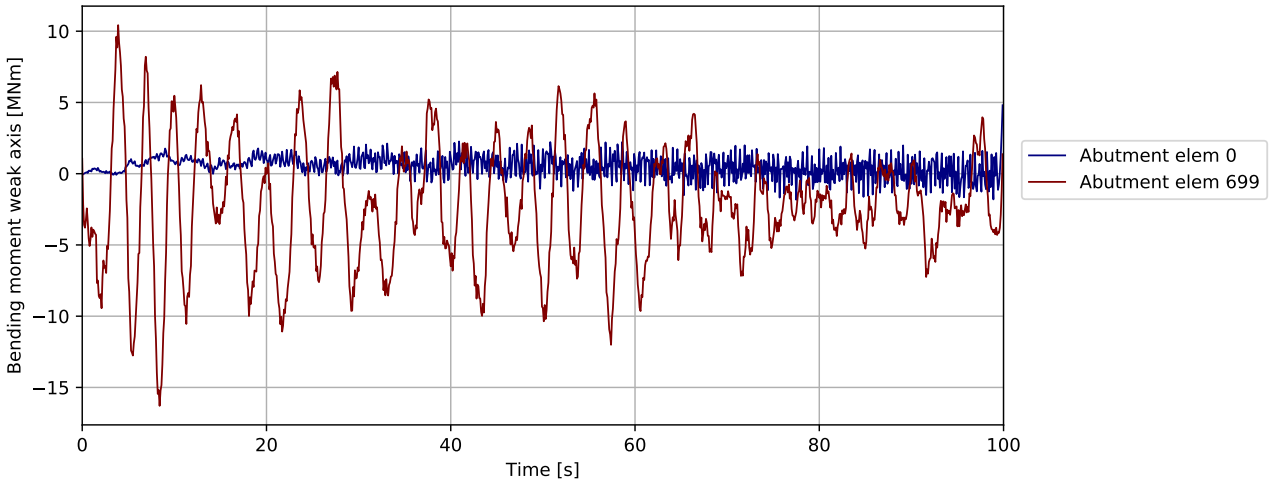

Figure 3.731: P A38 45deg - bridgegirder @abutments: Bending moment weak axis [MNm]

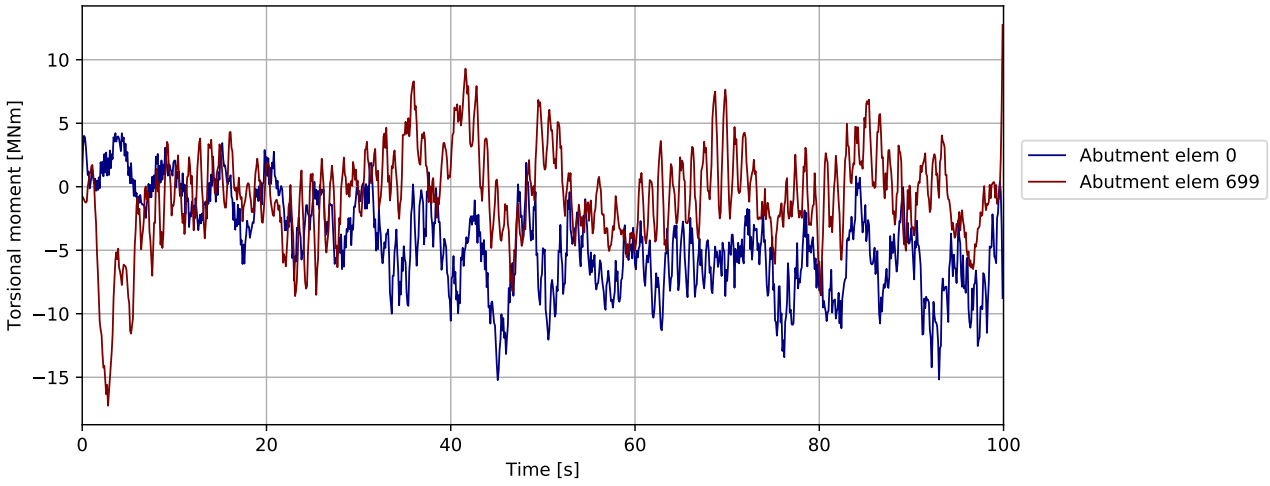

Figure 3.732: P A38 45deg - bridgegirder @abutments: Torsional moment [MNm]

Note : Compressive spring force is negative

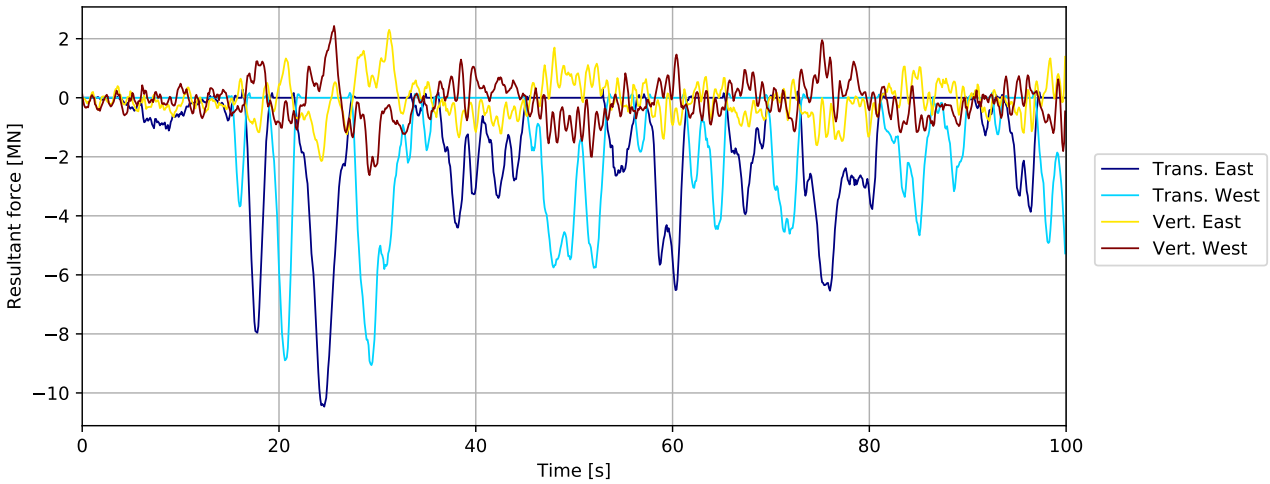

Figure 3.733: P A38 45deg - bridgegirder supports in tower: Resultant force [MN]

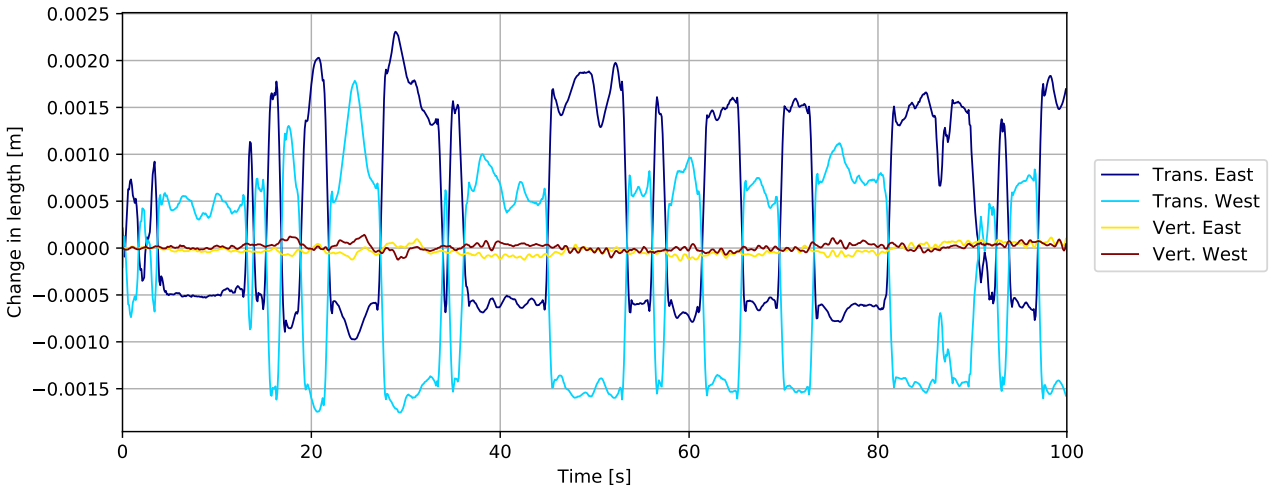

Figure 3.734: P A38 45deg - bridgegirder supports in tower: Change in length [m]

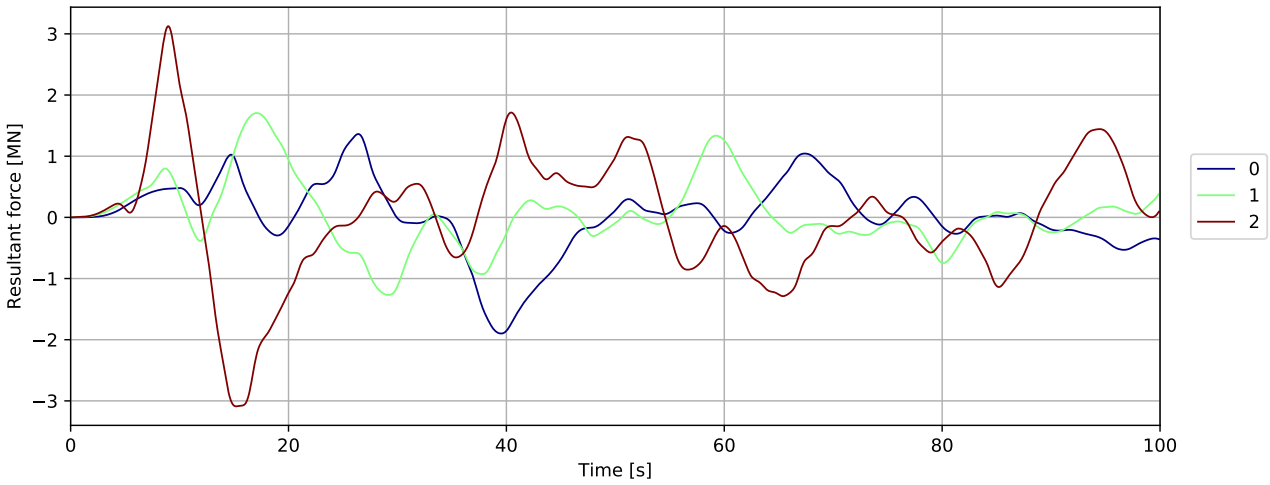

Figure 3.735: Mooring force

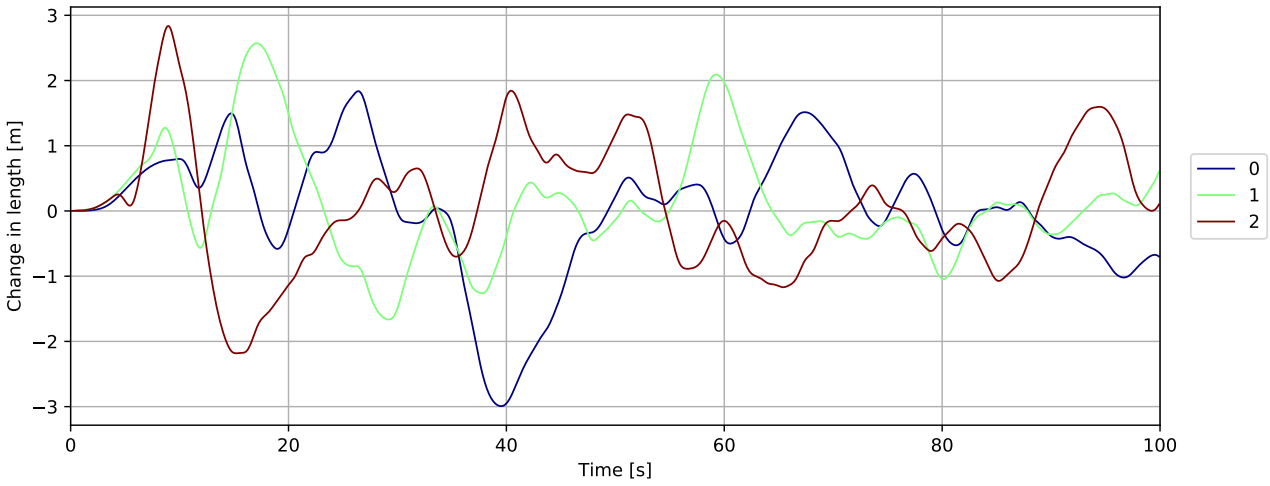

Figure 3.736: Mooring displacement

3.17 PontoonA39 45deg

3.17.1 Overall response

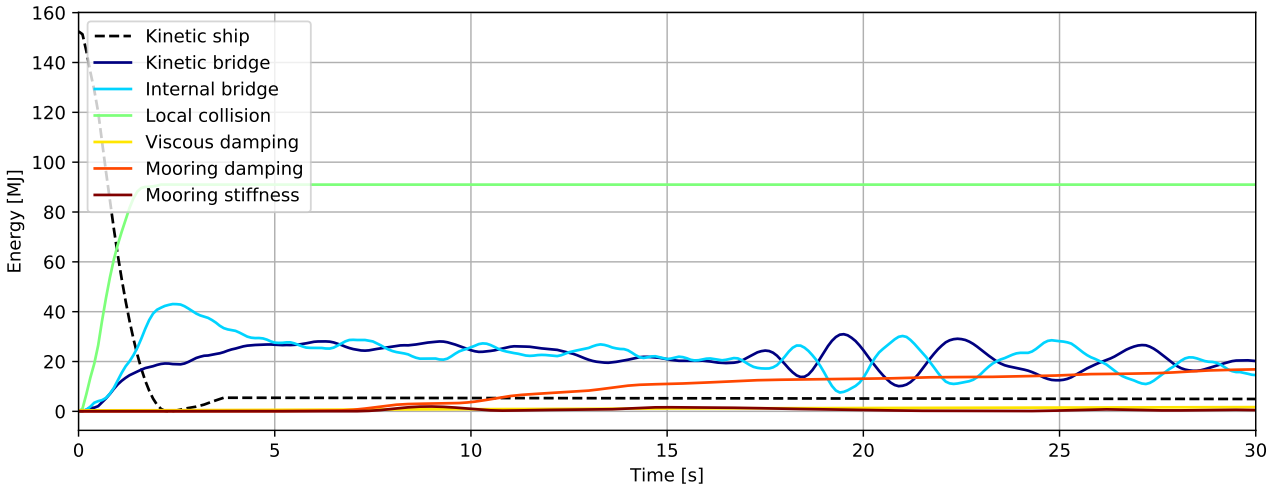

Figure 3.737: Energy [MJ] - initial phase

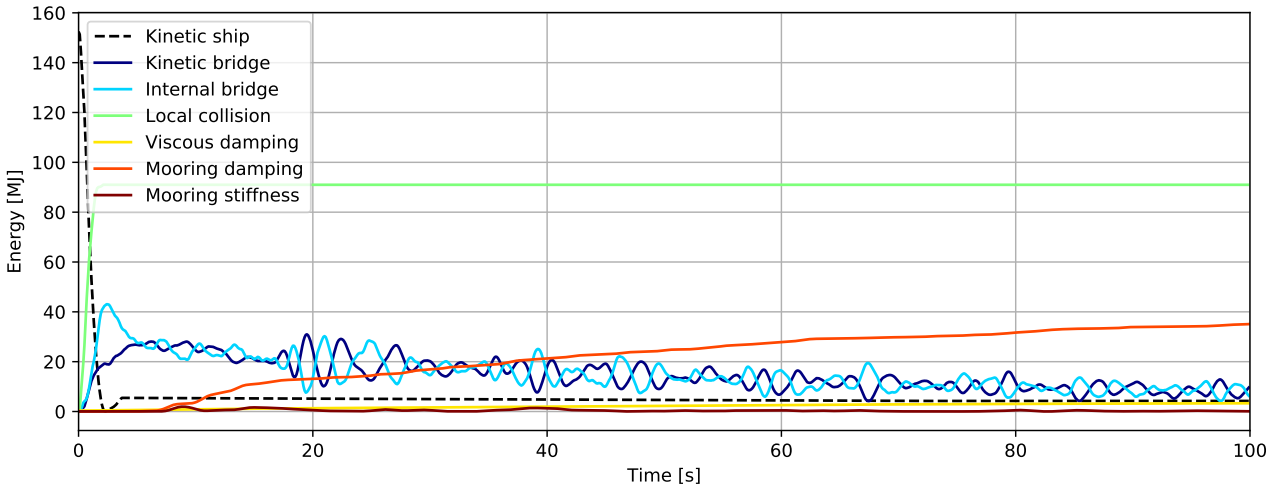

Figure 3.738: Energy [MJ]

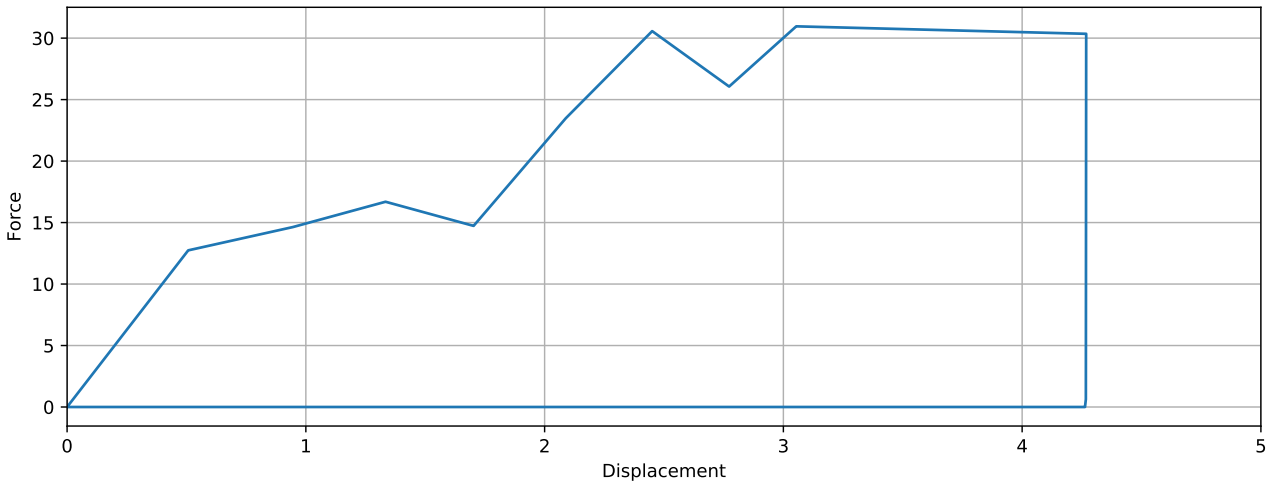

Figure 3.739: Simulated local collision force-displacement

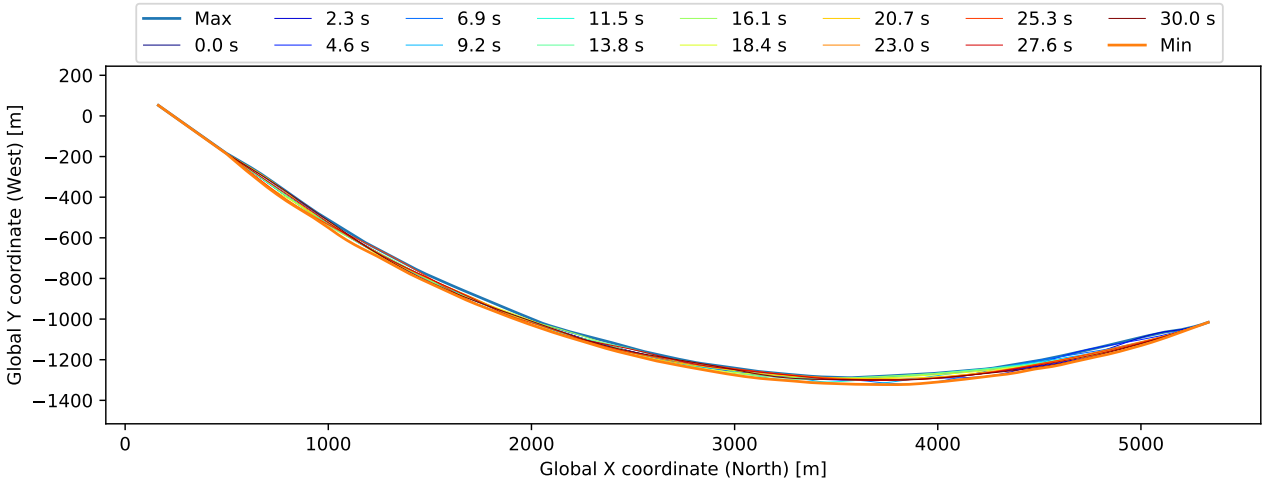

Figure 3.740: Bridgegirder deflection (10x displacment scaling)

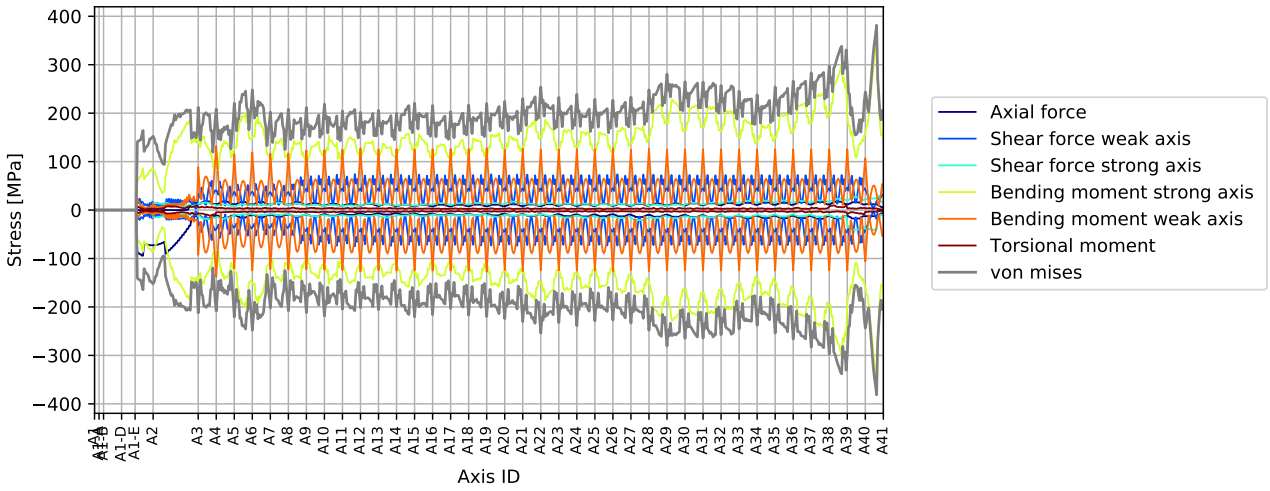

Figure 3.741: Stress envelope from all force components

3.17.2 Envelope plots

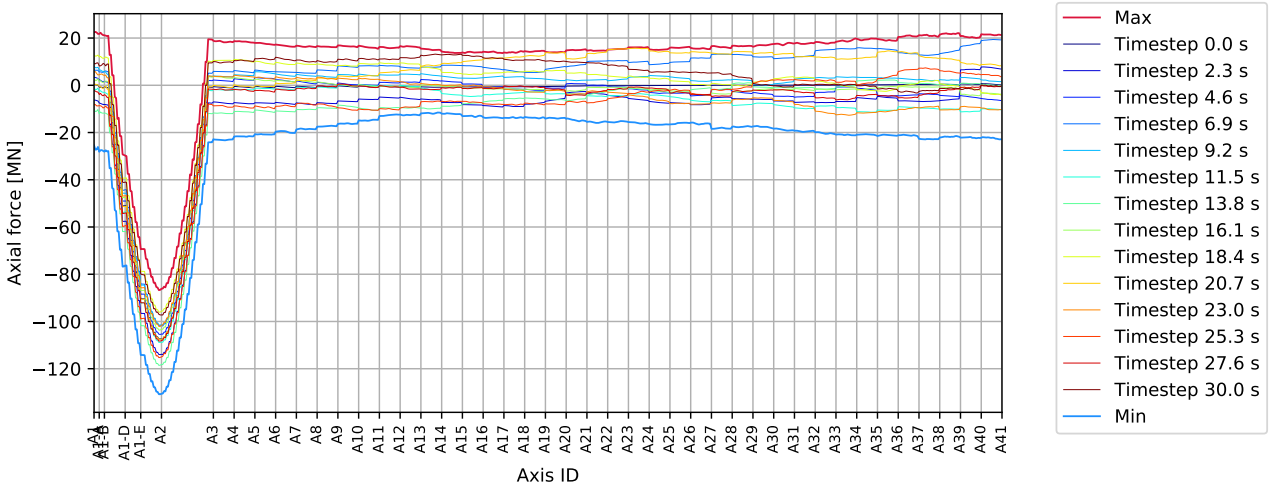

Figure 3.742: P A39 45deg - bridgegirder : Axial force [MN]

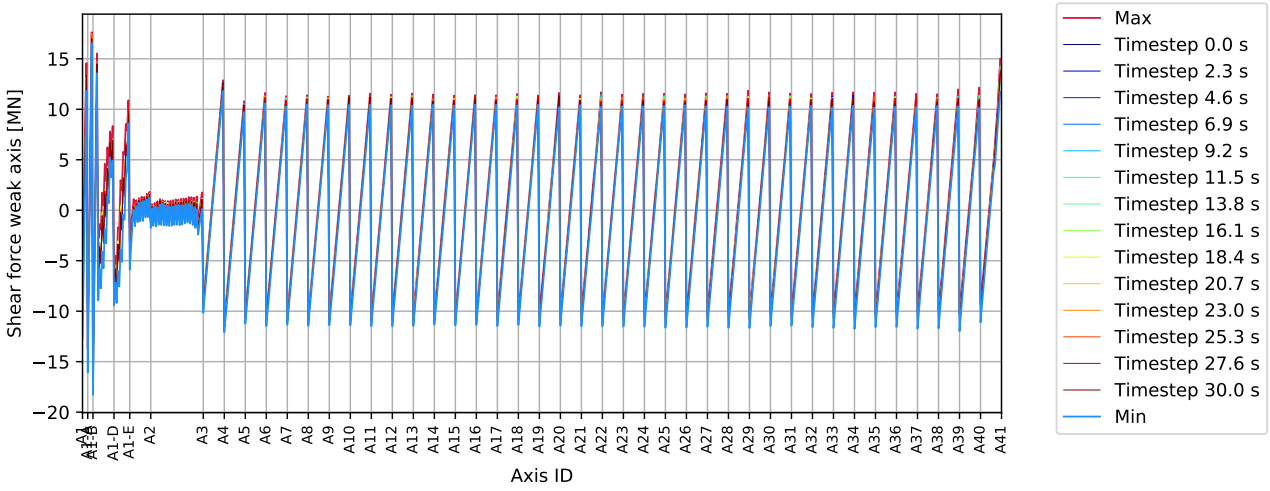

Figure 3.743: P A39 45deg - bridgegirder : Shear force weak axis [MN]

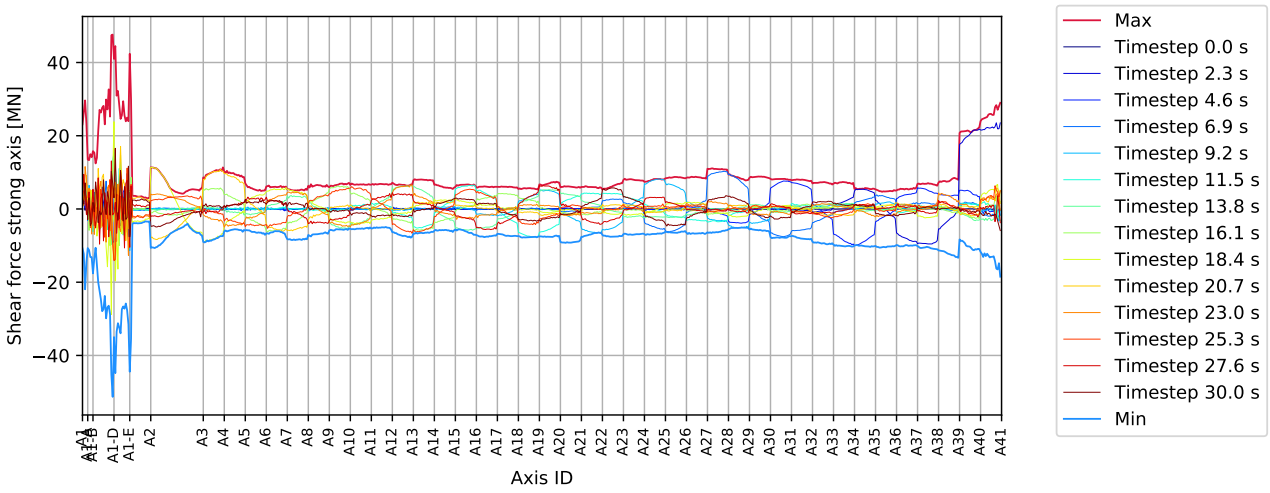

Figure 3.744: P A39 45deg - bridgegirder : Shear force strong axis [MN]

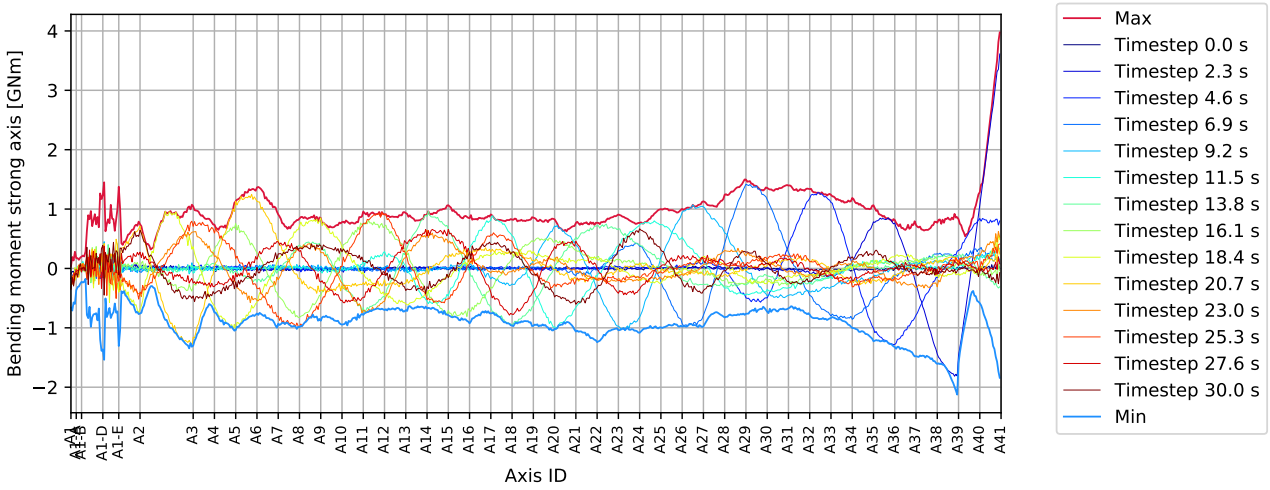

Figure 3.745: P A39 45deg - bridgegirder : Bending moment strong axis [GNm]

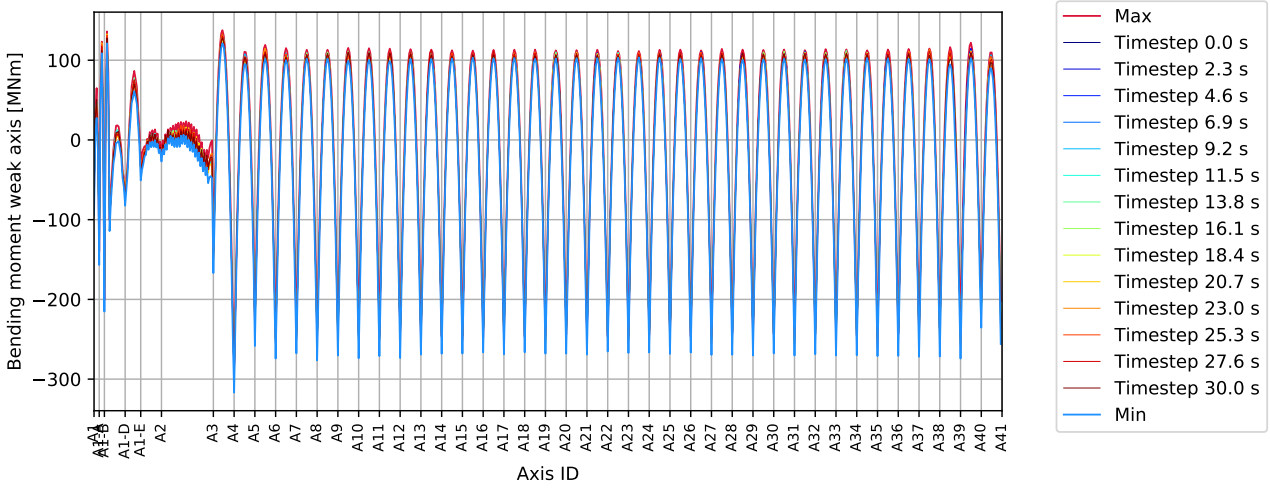

Figure 3.746: P A39 45deg - bridgegirder : Bending moment weak axis [MNm]

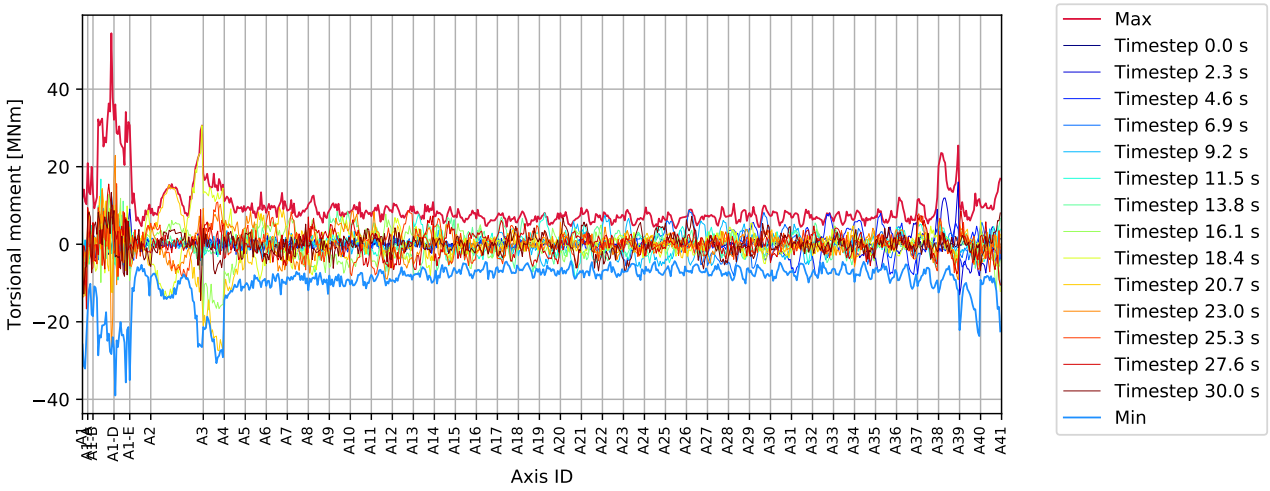

Figure 3.747: P A39 45deg - bridgegirder : Torsional moment [MNm]

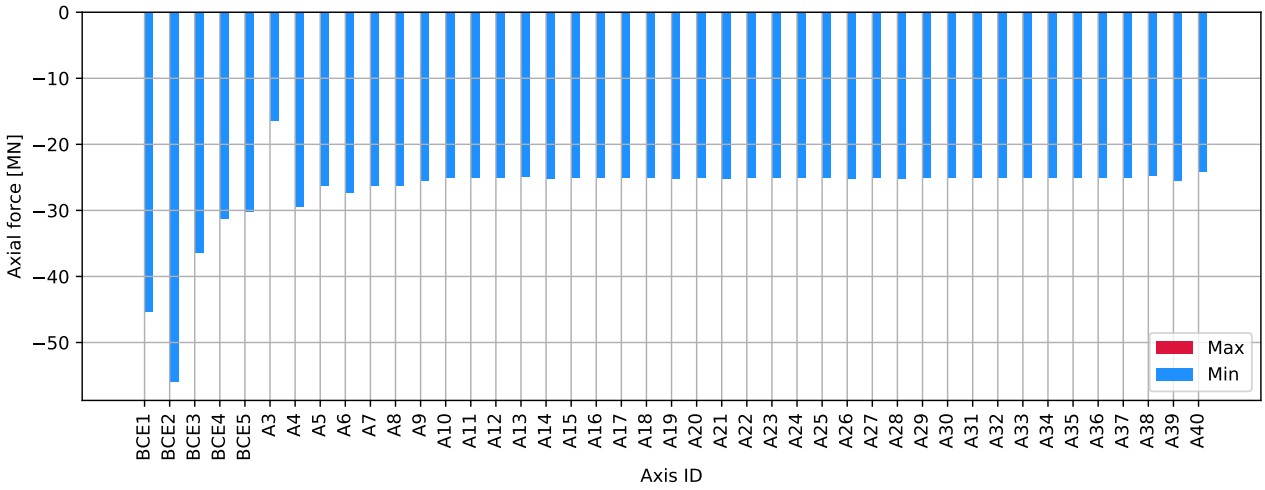

Figure 3.748: P A39 45deg - columns bottom : Axial force [MN]

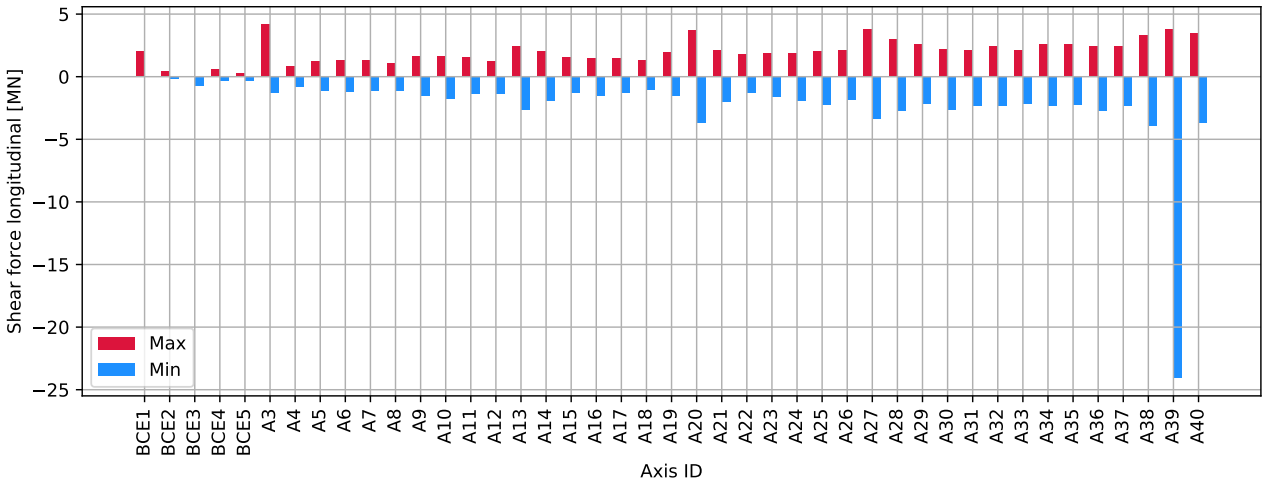

Figure 3.749: P A39 45deg - columns bottom : Shear force longitudinal [MN]

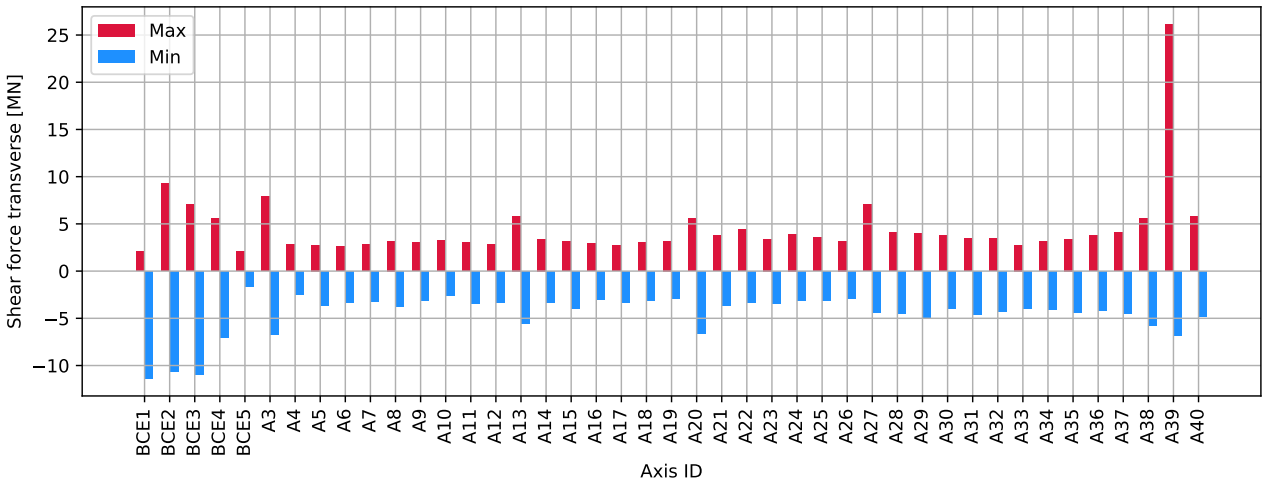

Figure 3.750: P A39 45deg - columns bottom : Shear force transverse [MN]

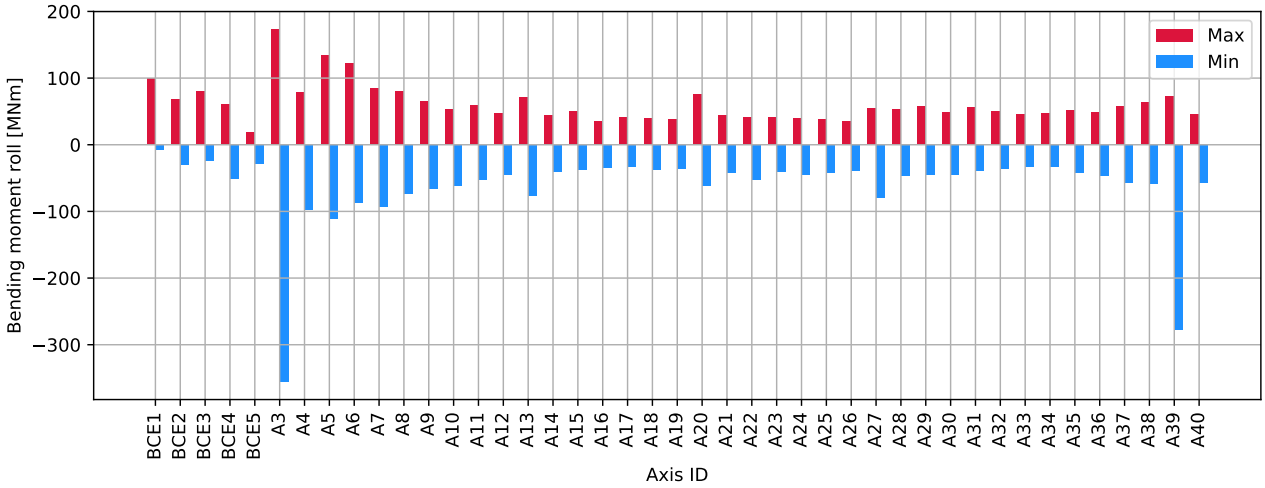

Figure 3.751: P A39 45deg - columns bottom : Bending moment roll [MNm]

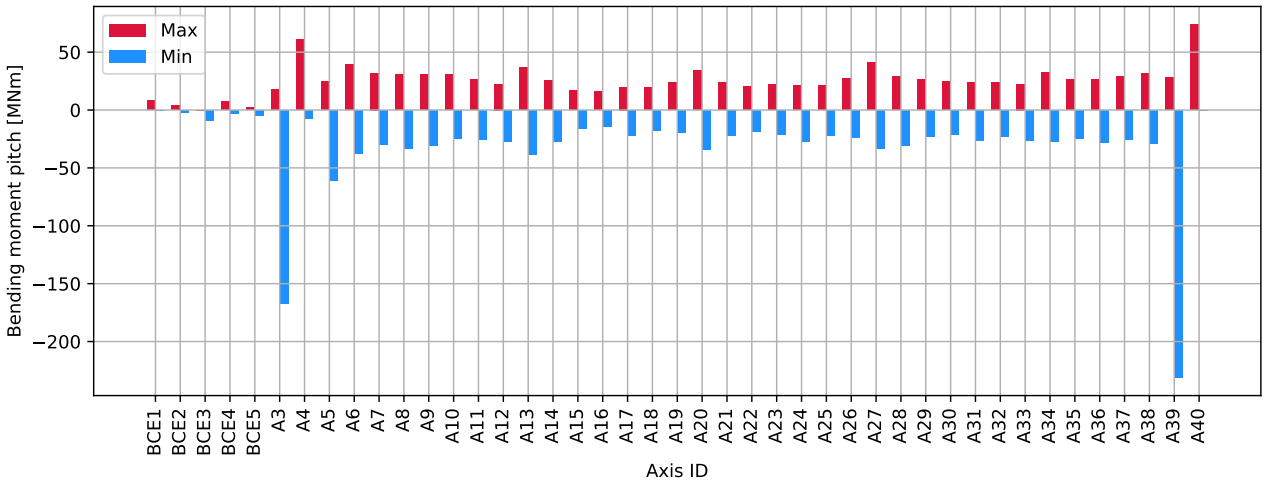

Figure 3.752: P A39 45deg - columns bottom : Bending moment pitch [MNm]

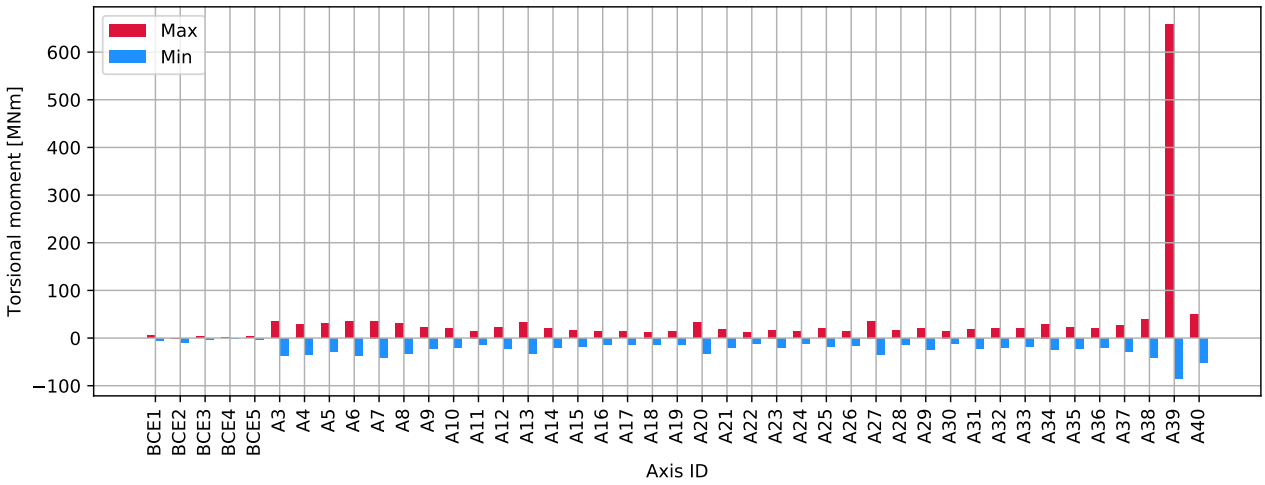

Figure 3.753: P A39 45deg - columns bottom : Torsional moment [MNm]

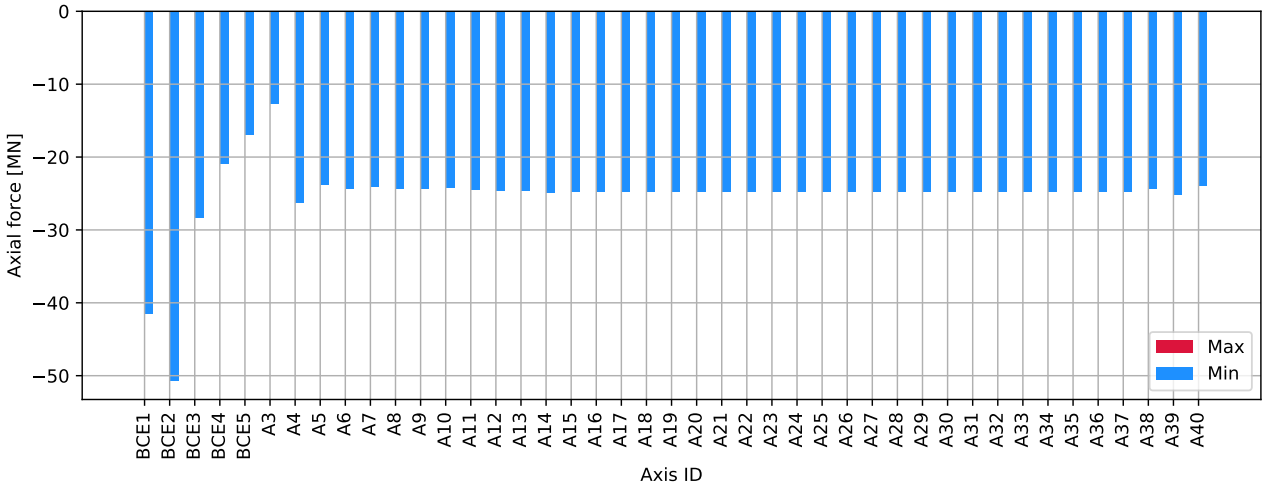

Figure 3.754: P A39 45deg - columns top : Axial force [MN]

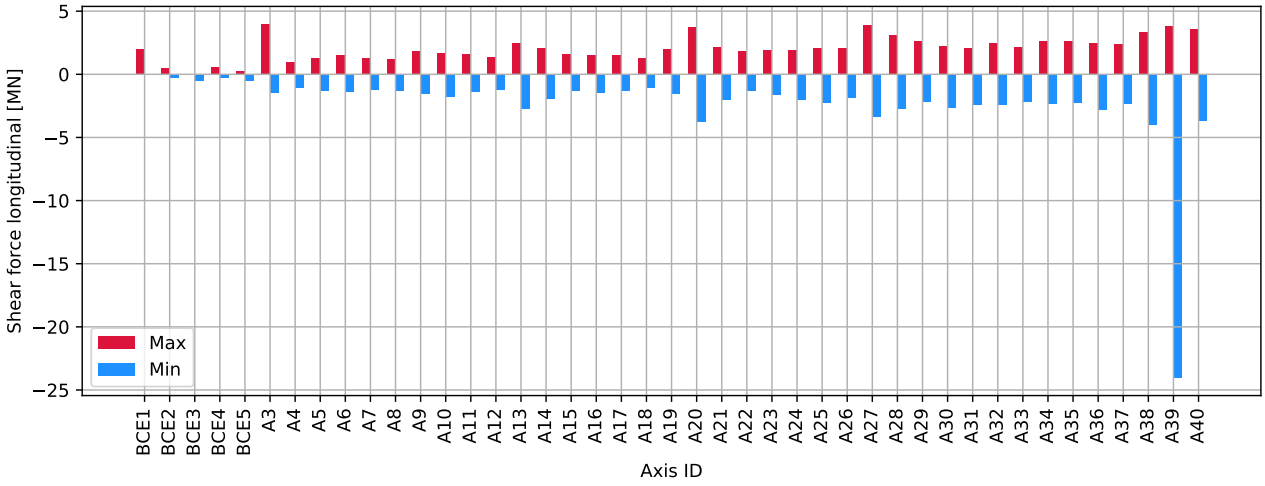

Figure 3.755: P A39 45deg - columns top : Shear force longitudinal [MN]

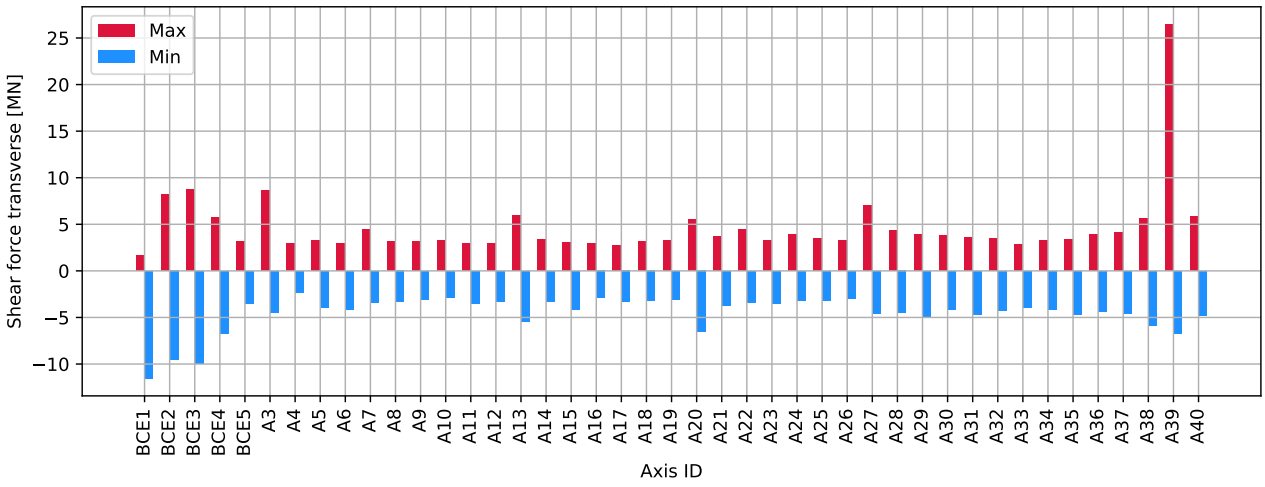

Figure 3.756: P A39 45deg - columns top : Shear force transverse [MN]

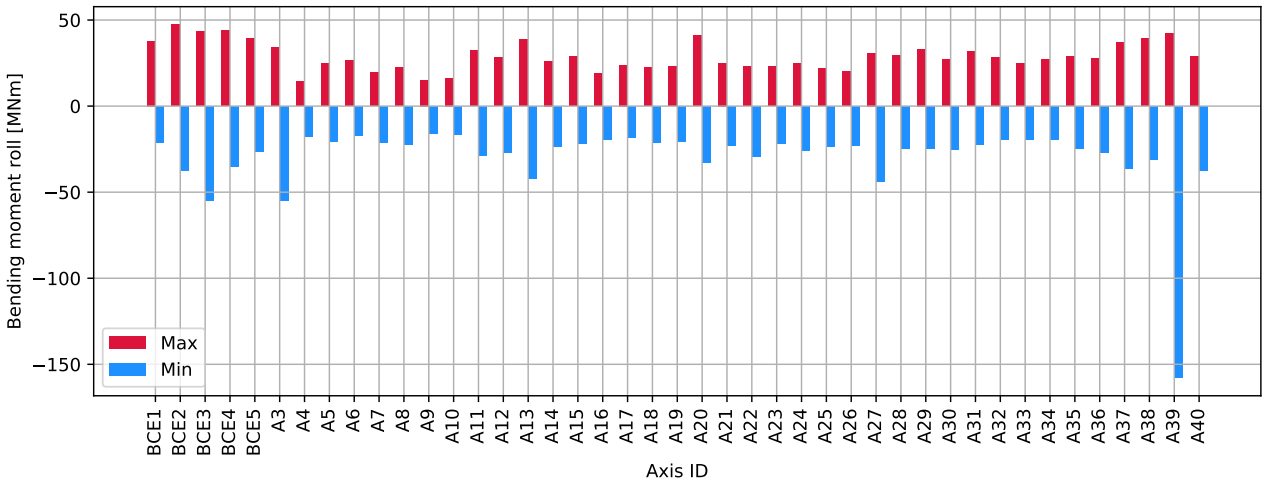

Figure 3.757: P A39 45deg - columns top : Bending moment roll [MNm]

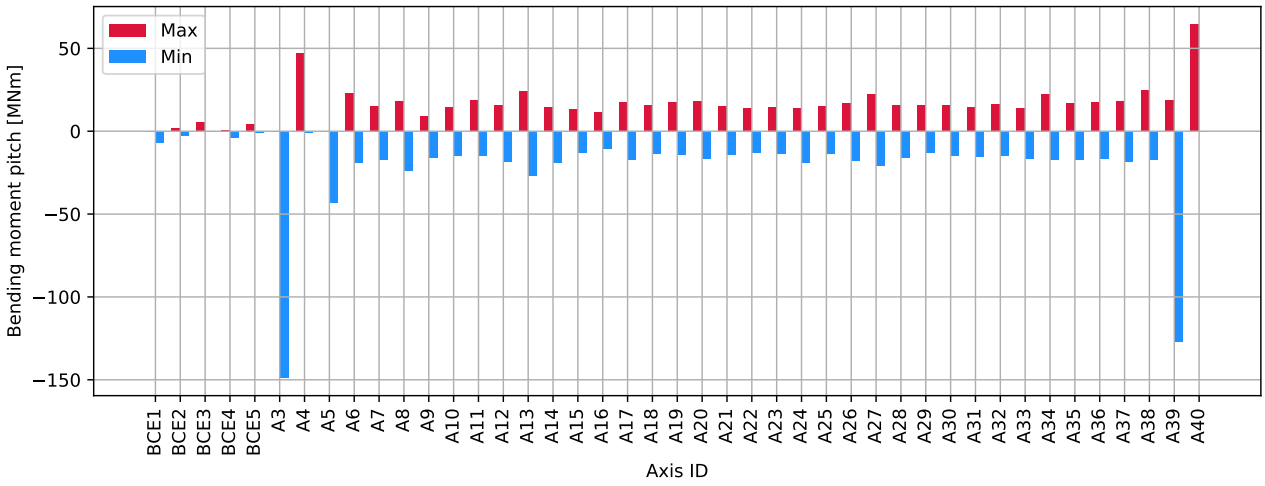

Figure 3.758: P A39 45deg - columns top : Bending moment pitch [MNm]

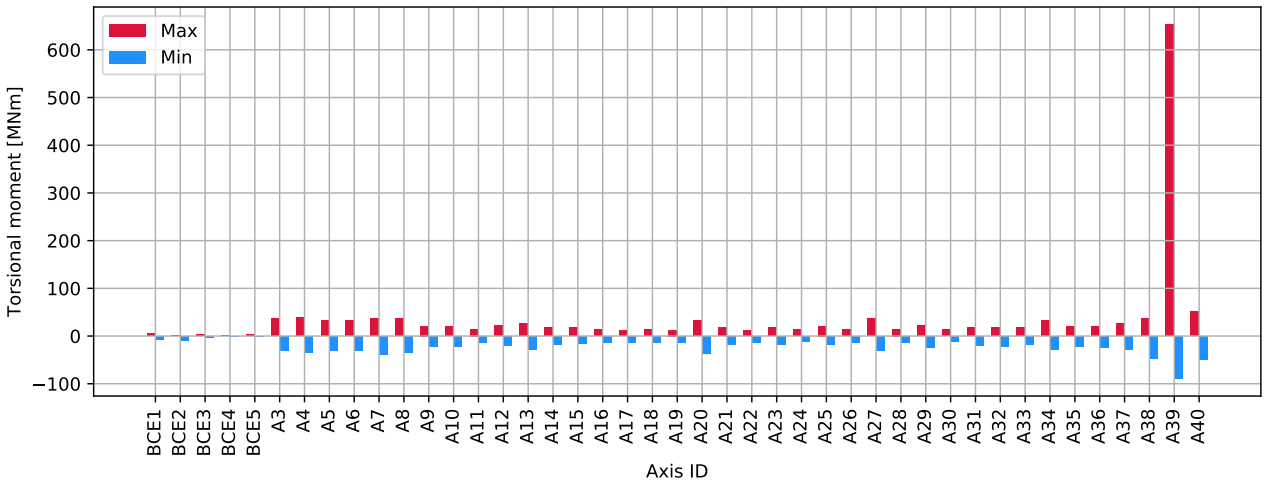

Figure 3.759: P A39 45deg - columns top : Torsional moment [MNm]

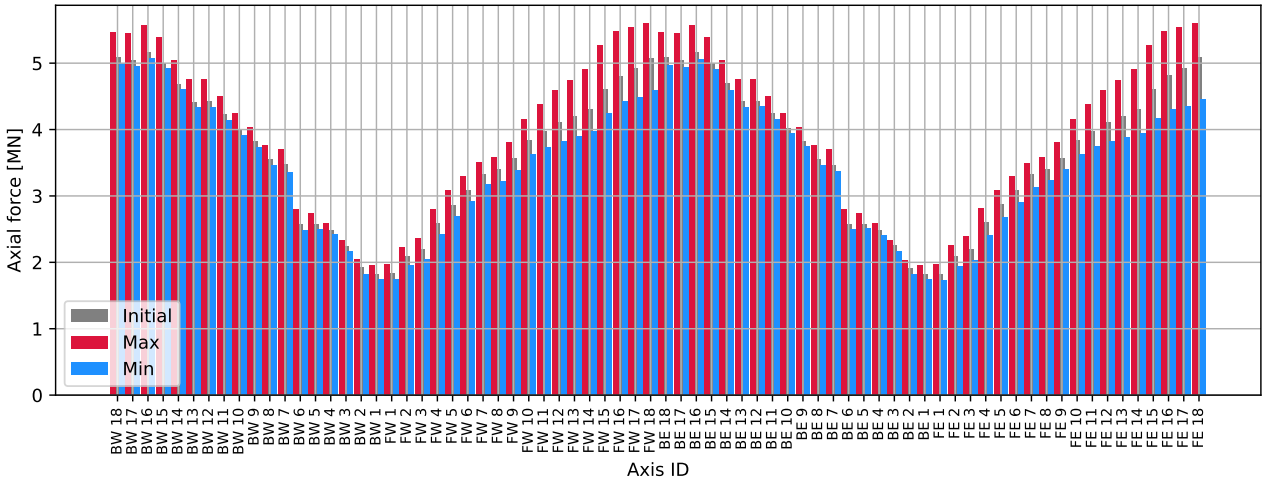

Figure 3.760: P A39 45deg - cables : Axial force [MN]

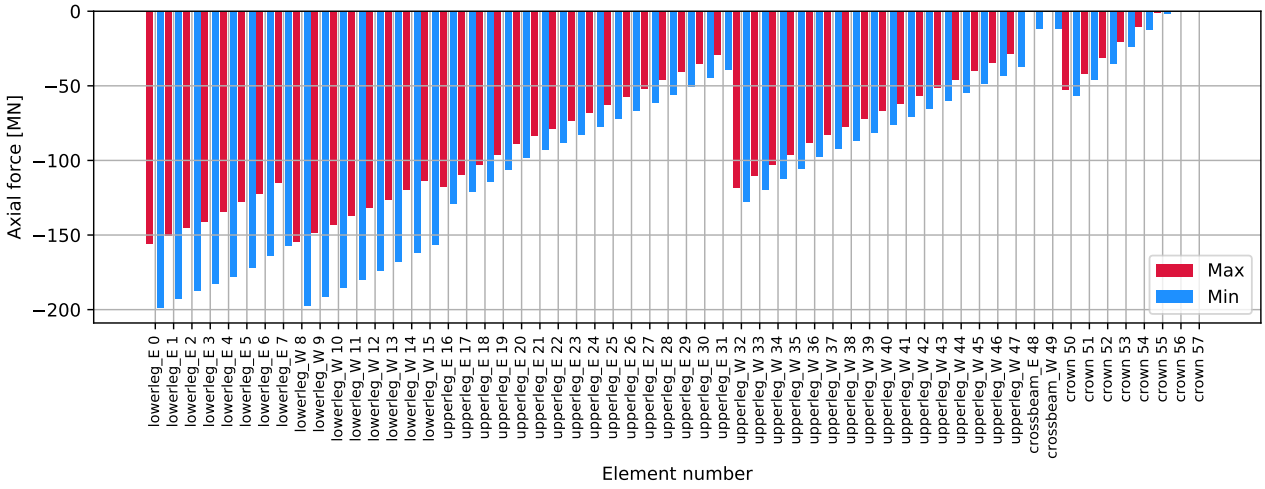

Figure 3.761: P A39 45deg - tower: Axial force [MN]

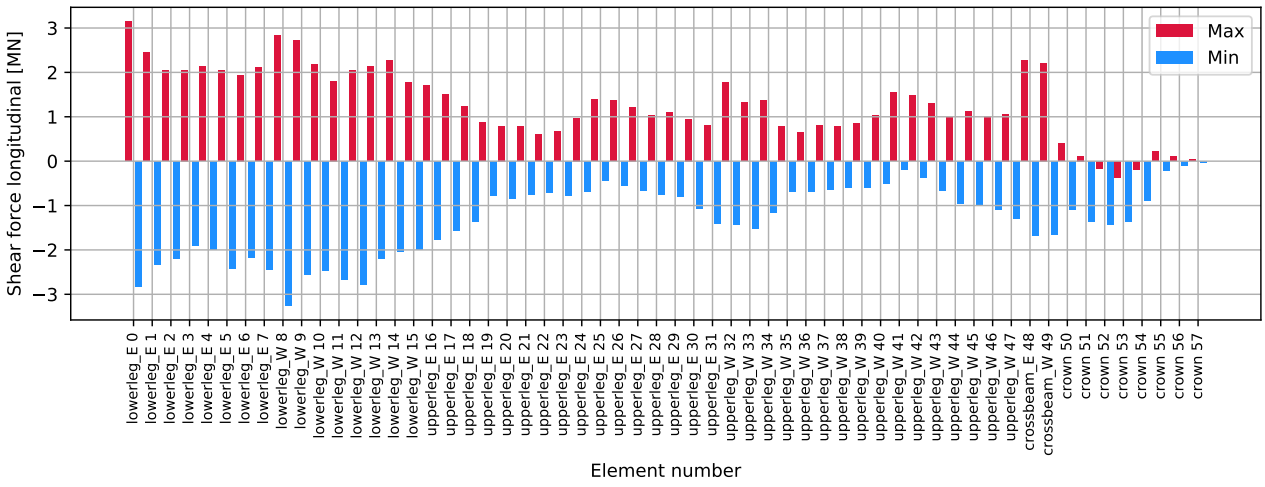

Figure 3.762: P A39 45deg - tower: Shear force longitudinal [MN]

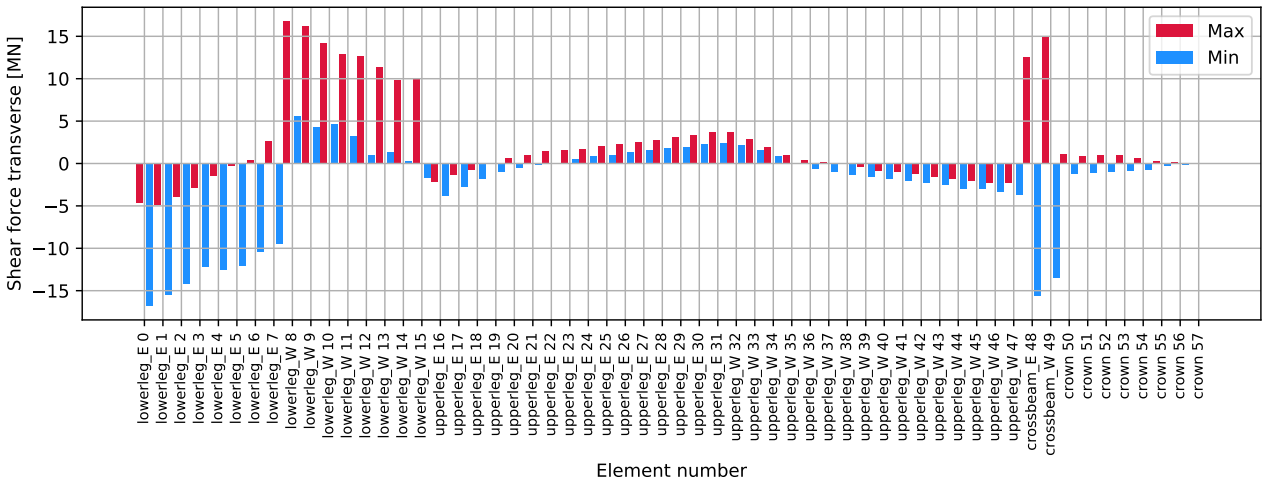

Figure 3.763: P A39 45deg - tower: Shear force transverse [MN]

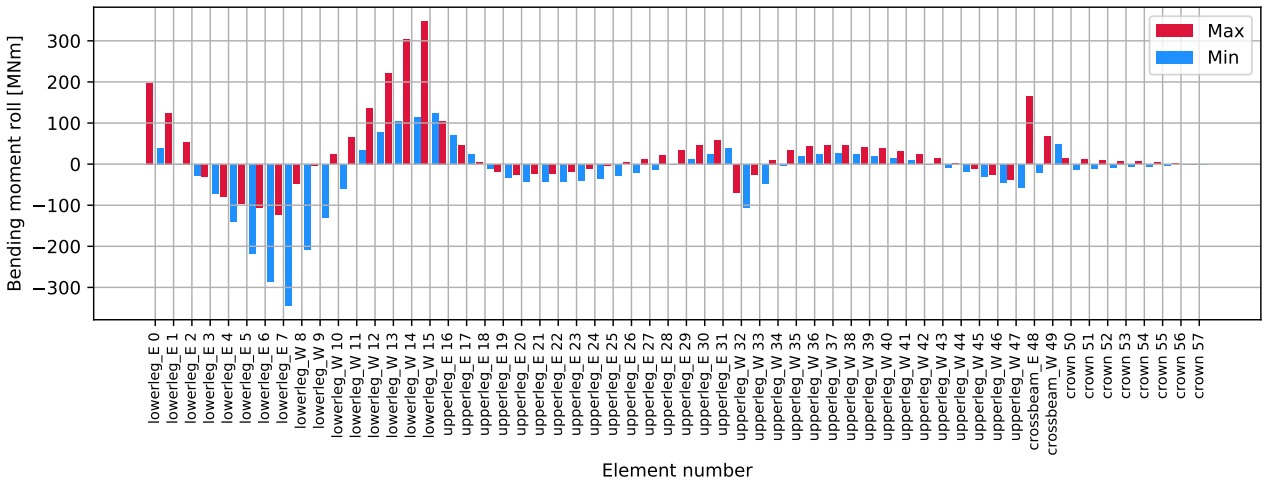

Figure 3.764: P A39 45deg - tower: Bending moment roll [MNm]

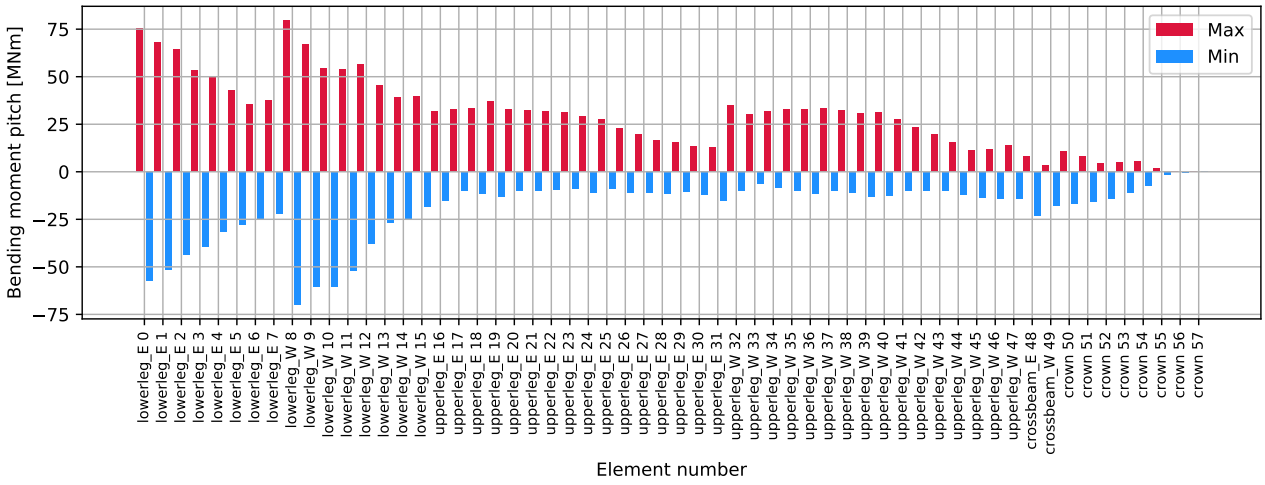

Figure 3.765: P A39 45deg - tower: Bending moment pitch [MNm]

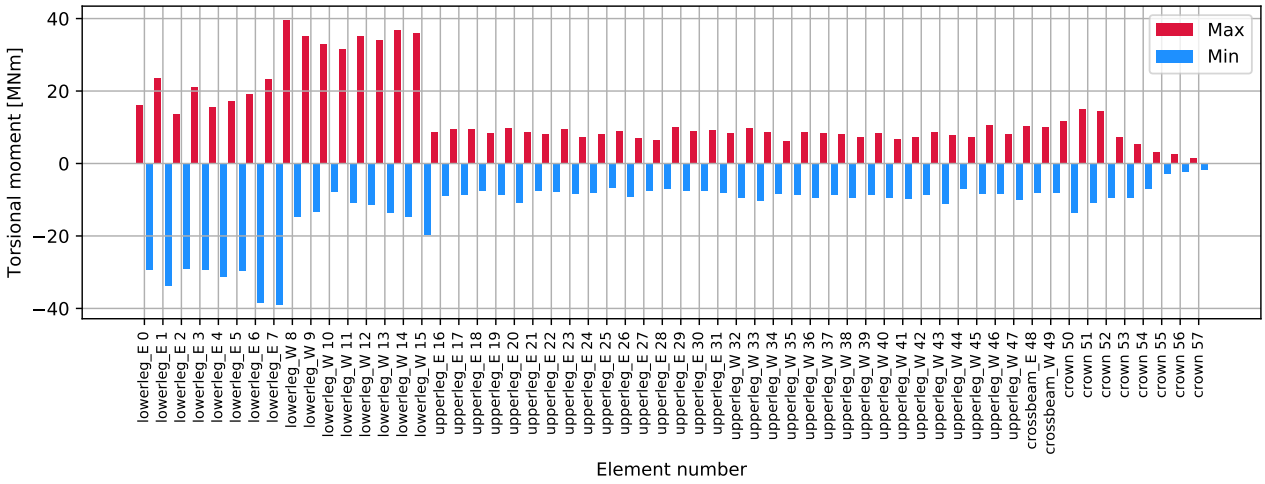

Figure 3.766: P A39 45deg - tower: Torsional moment [MNm]

3.17.3 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

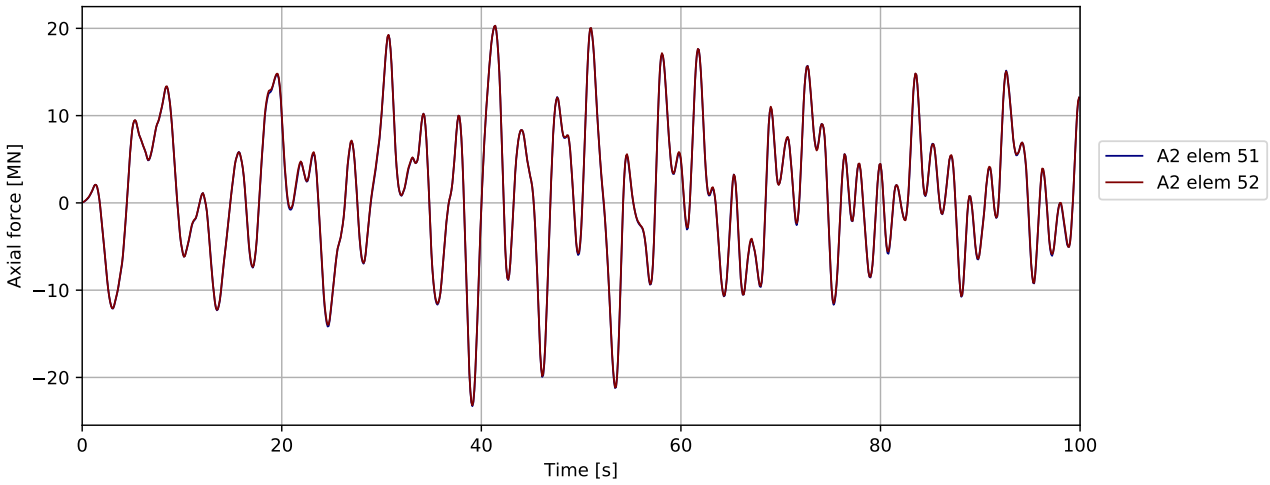

Figure 3.767: P A39 45deg - bridgegirder @ pylon: Axial force [MN]

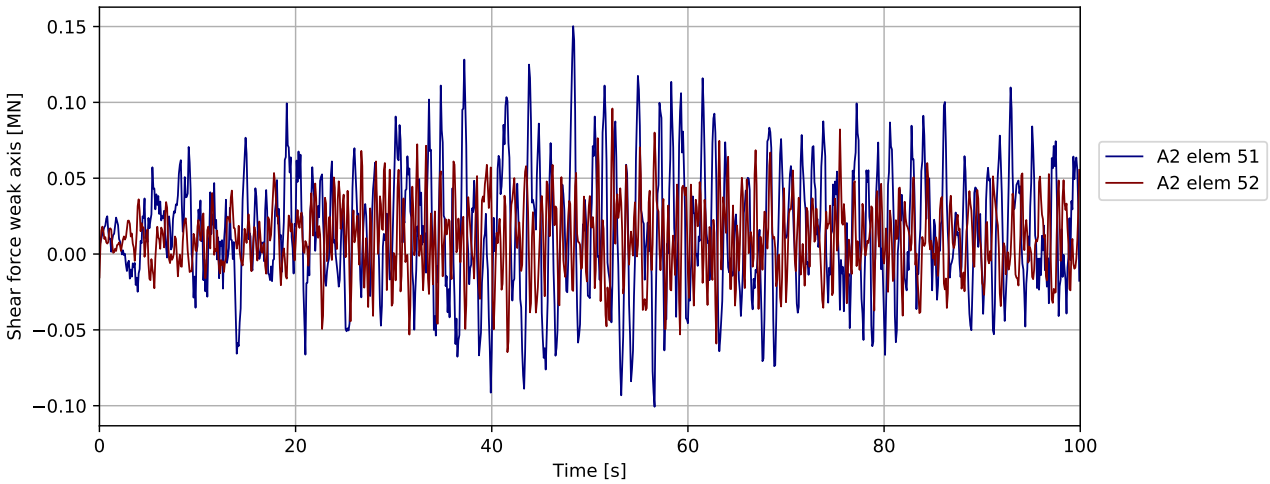

Figure 3.768: P A39 45deg - bridgegirder @ pylon: Shear force weak axis [MN]

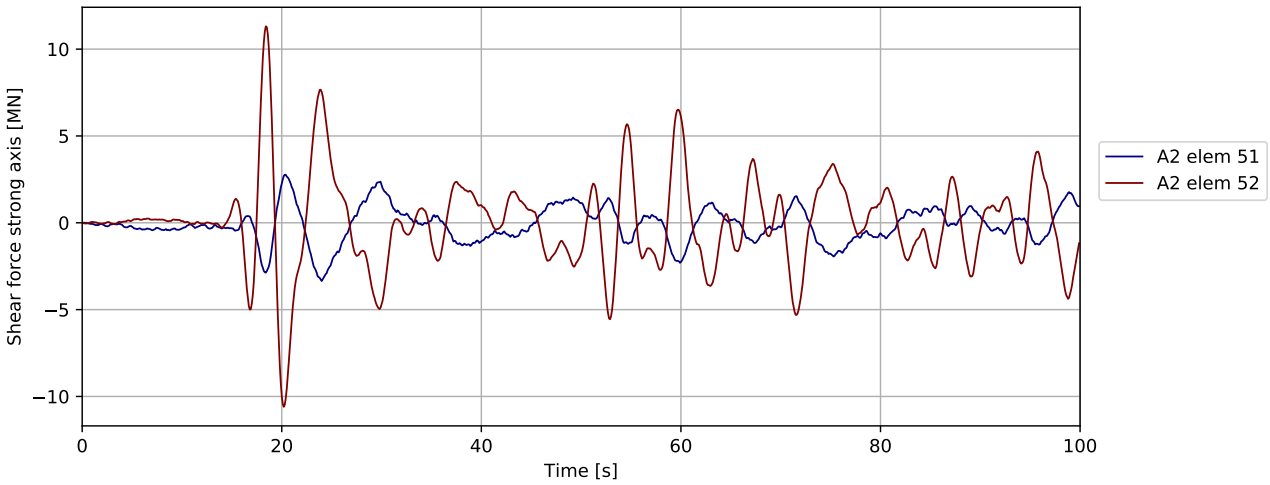

Figure 3.769: P A39 45deg - bridgegirder @ pylon: Shear force strong axis [MN]

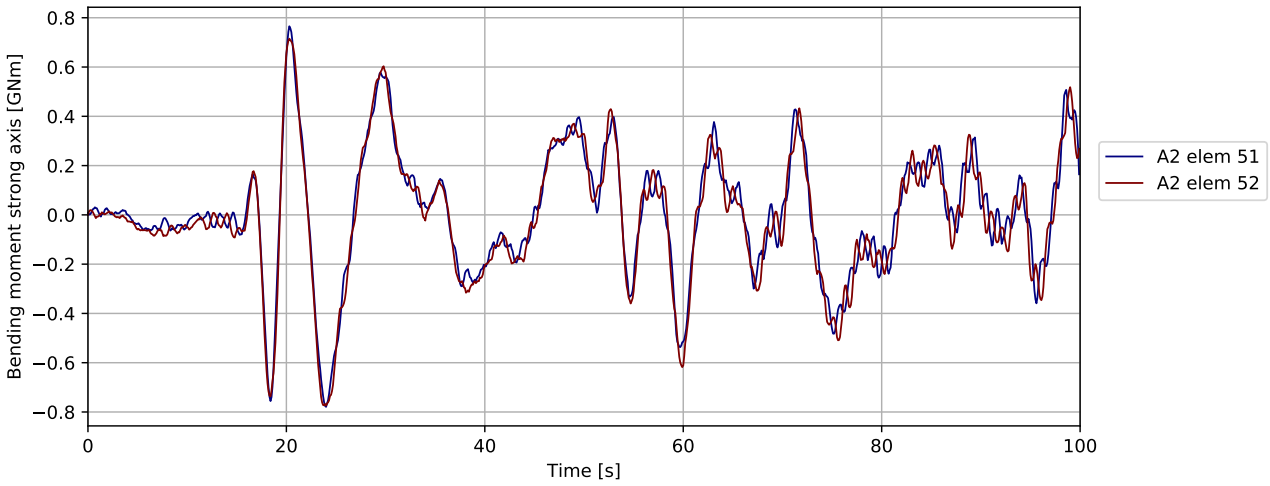

Figure 3.770: P A39 45deg - bridgegirder @ pylon: Bending moment strong axis [GNm]

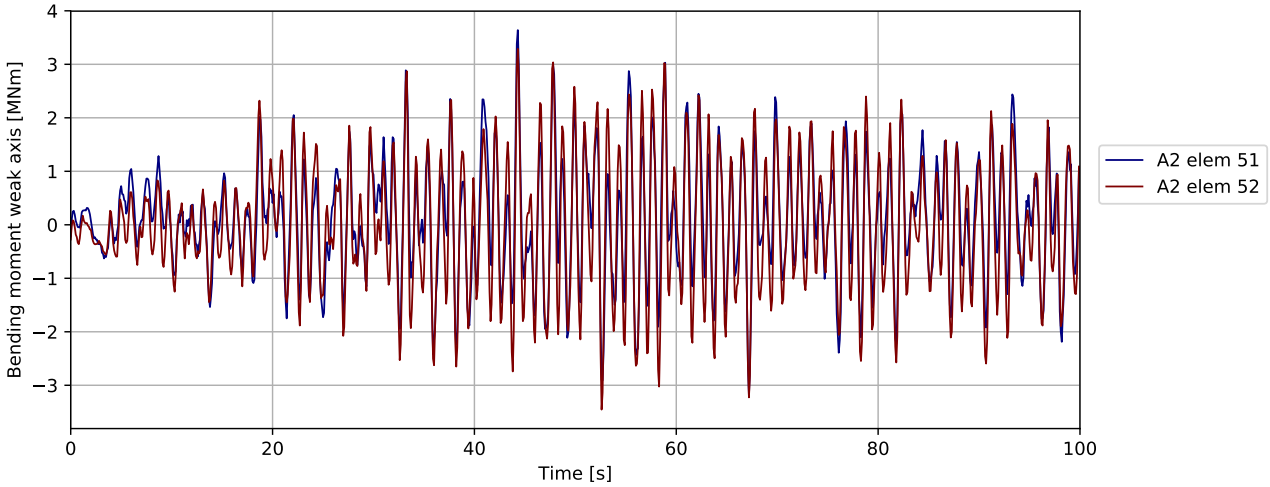

Figure 3.771: P A39 45deg - bridgegirder @ pylon: Bending moment weak axis [MNm]

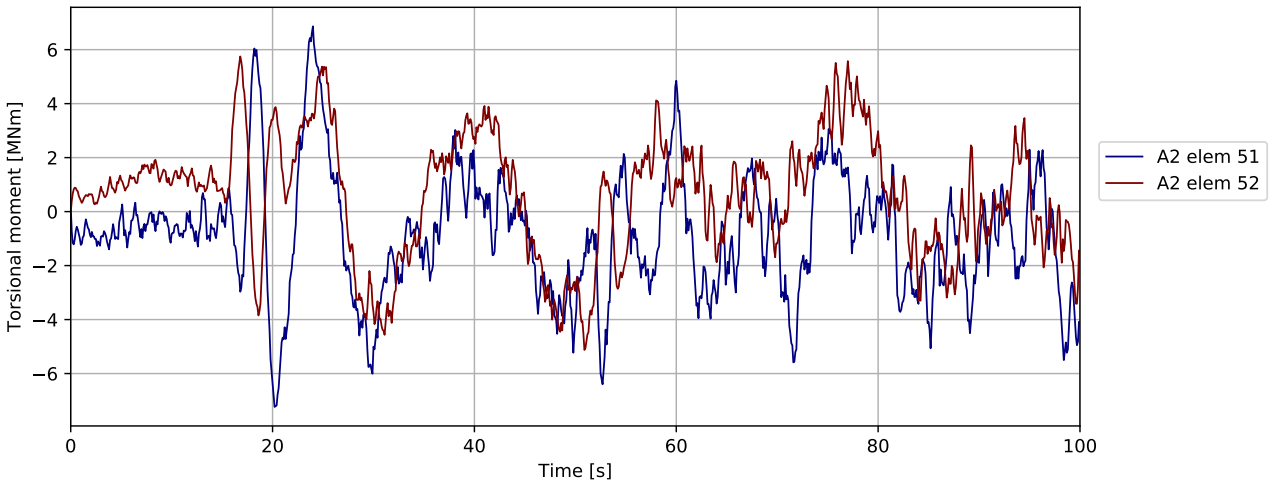

Figure 3.772: P A39 45deg - bridgegirder @ pylon: Torsional moment [MNm]

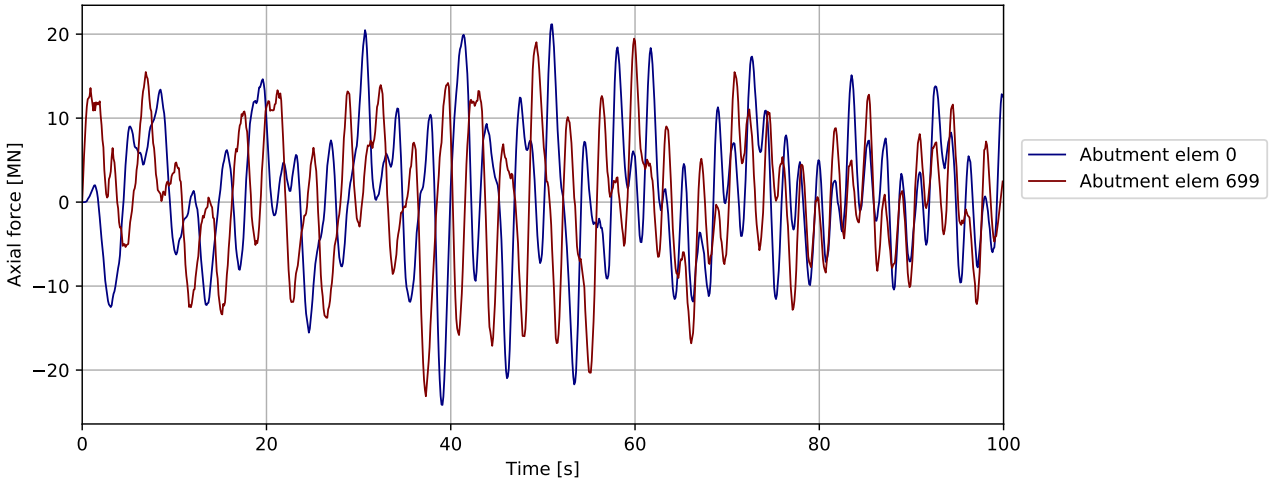

Figure 3.773: P A39 45deg - bridgegirder @abutments: Axial force [MN]

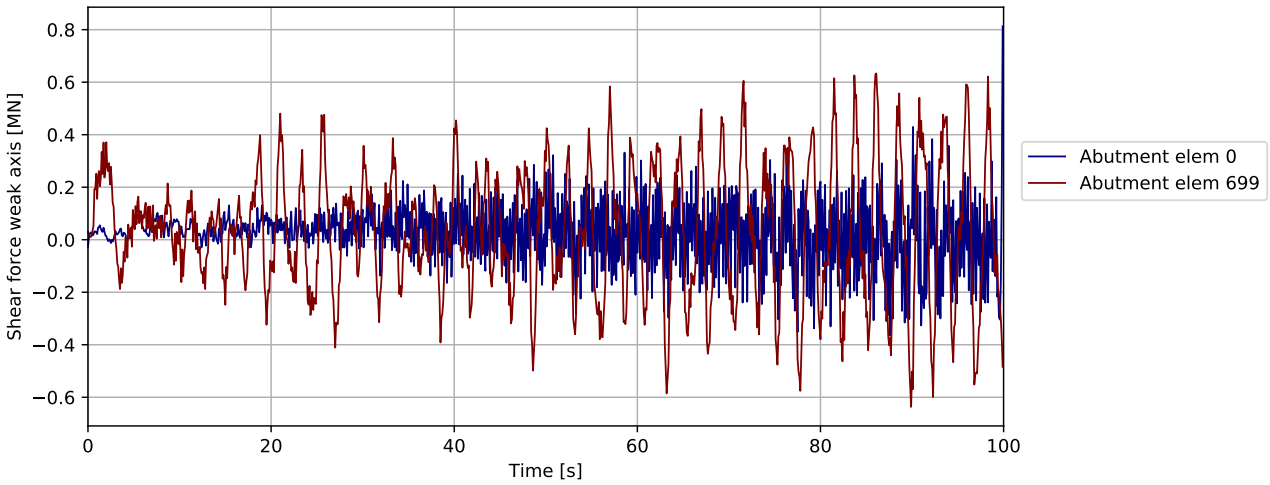

Figure 3.774: P A39 45deg - bridgegirder @abutments: Shear force weak axis [MN]

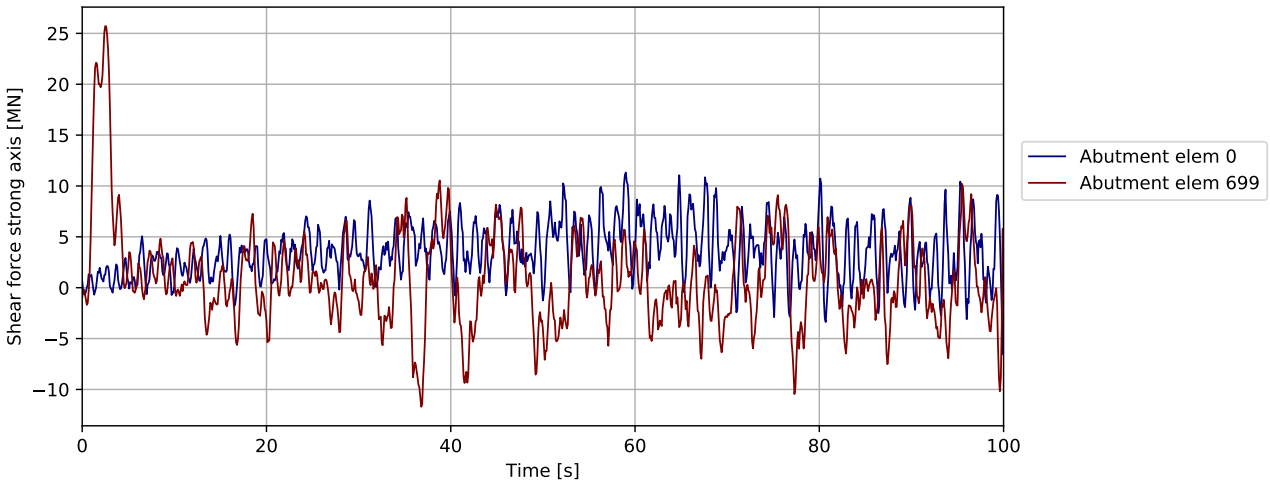

Figure 3.775: P A39 45deg - bridgegirder @abutments: Shear force strong axis [MN]

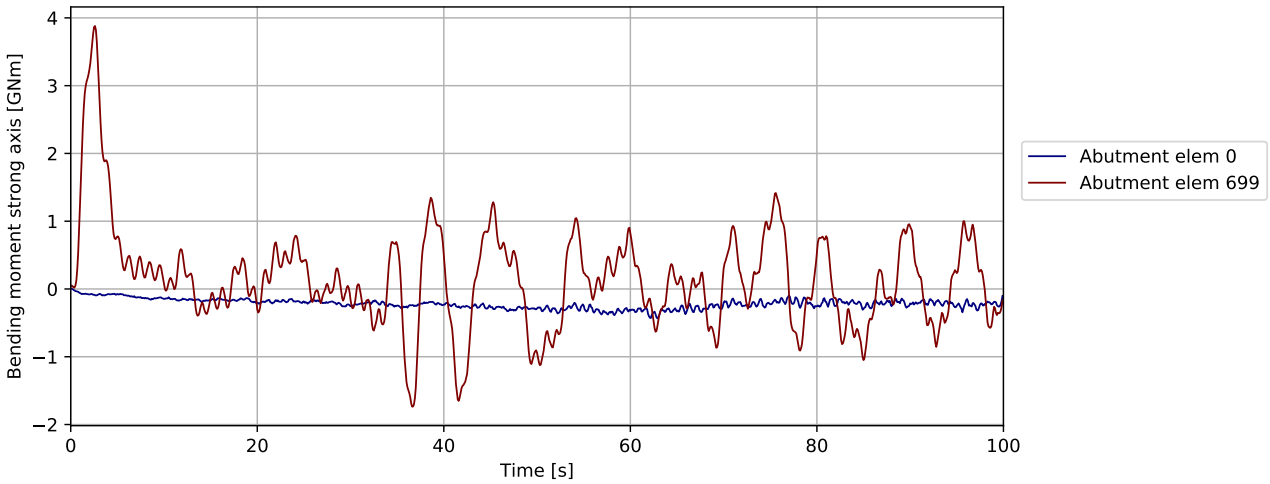

Figure 3.776: P A39 45deg - bridgegirder @abutments: Bending moment strong axis [GNm]

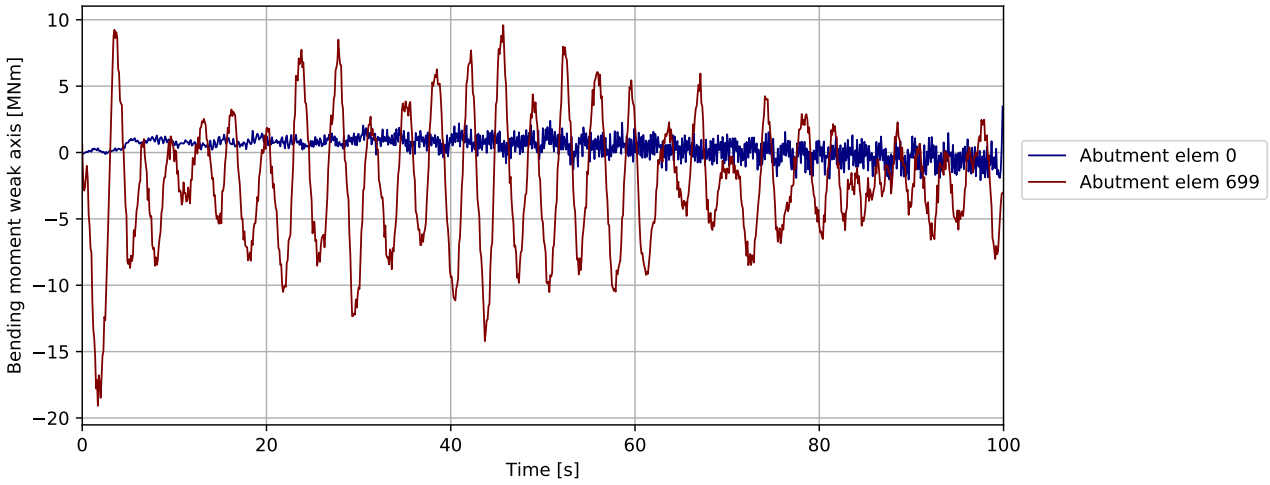

Figure 3.777: P A39 45deg - bridgegirder @abutments: Bending moment weak axis [MNm]

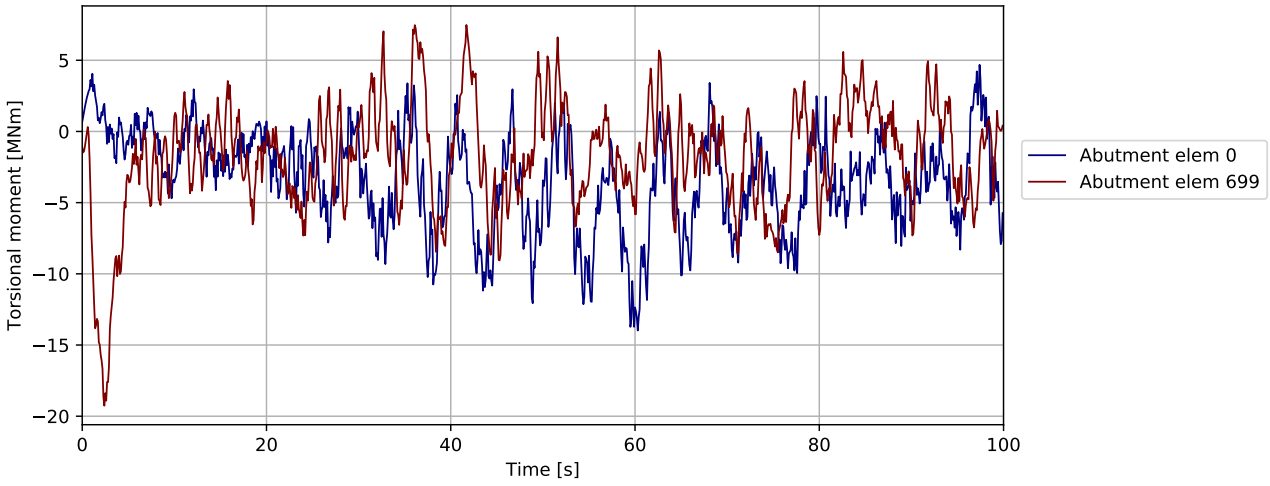

Figure 3.778: P A39 45deg - bridgegirder @abutments: Torsional moment [MNm]

Note : Compressive spring force is negative

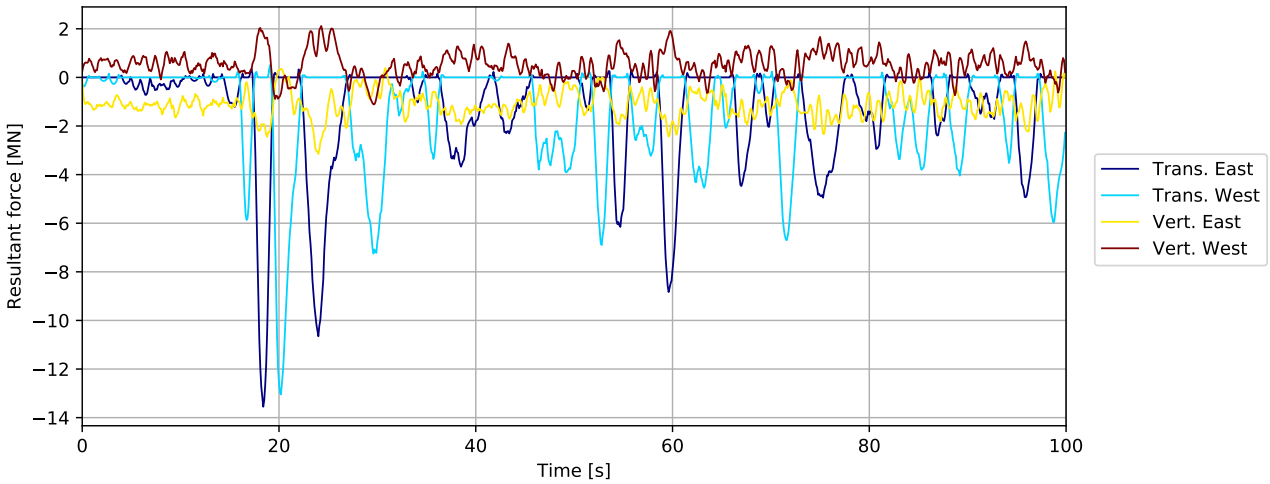

Figure 3.779: P A39 45deg - bridgegirder supports in tower: Resultant force [MN]

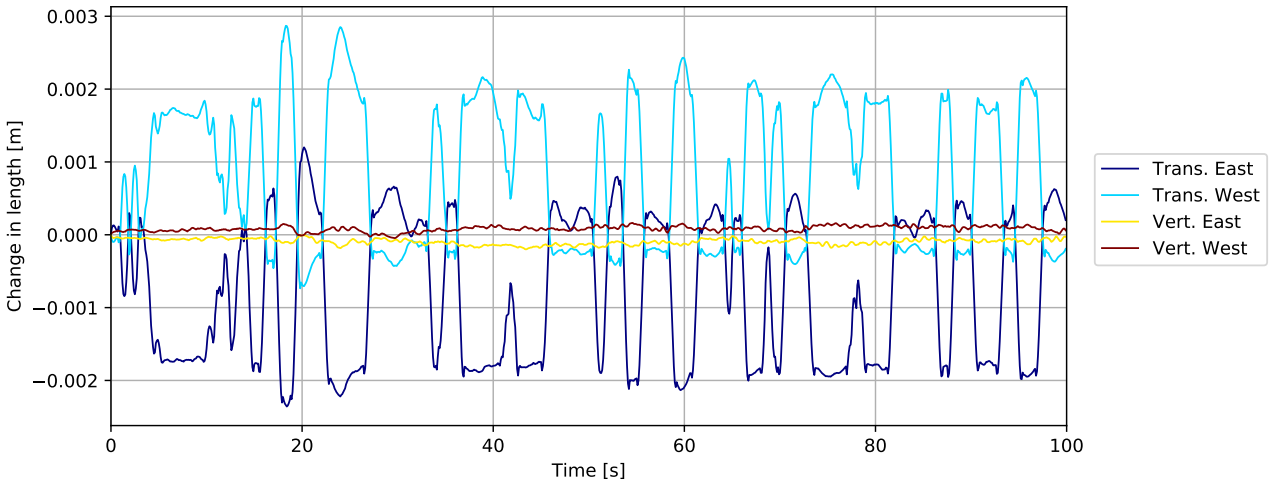

Figure 3.780: P A39 45deg - bridgegirder supports in tower: Change in length [m]

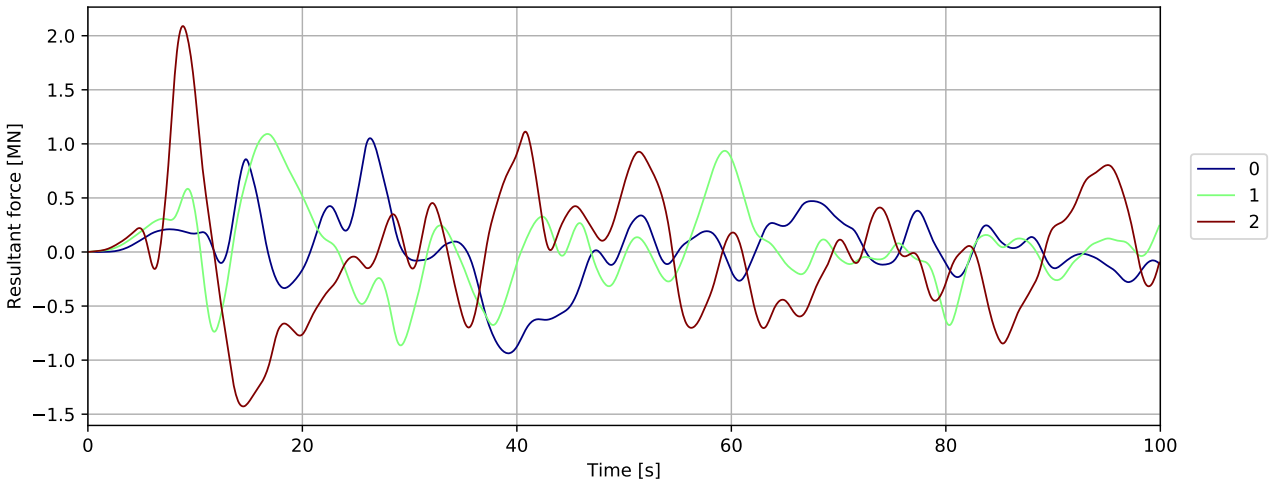

Figure 3.781: Mooring force

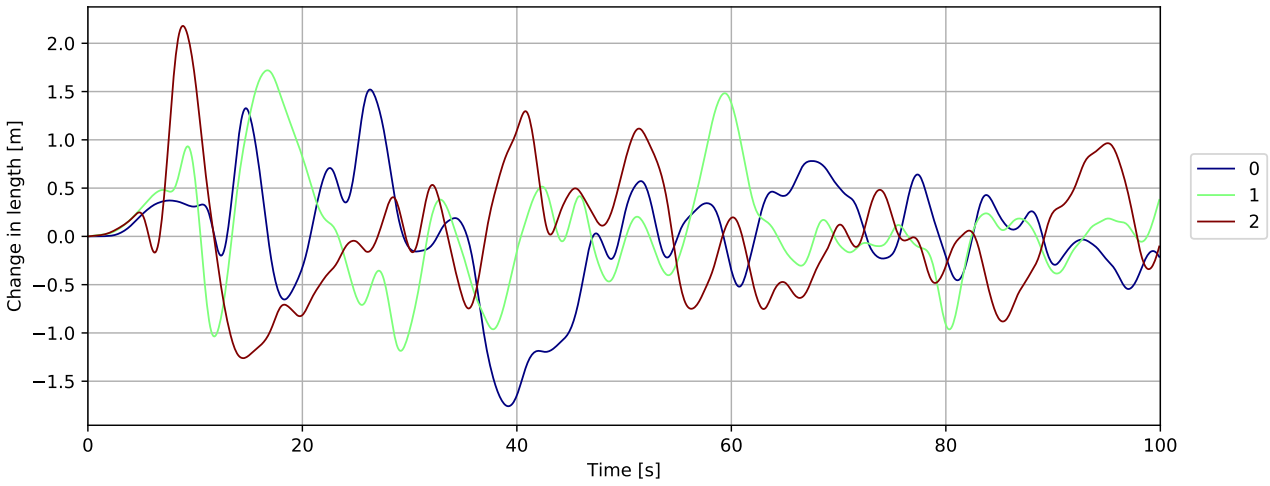

Figure 3.782: Mooring displacement

3.18 PontoonA40 45deg

3.18.1 Overall response

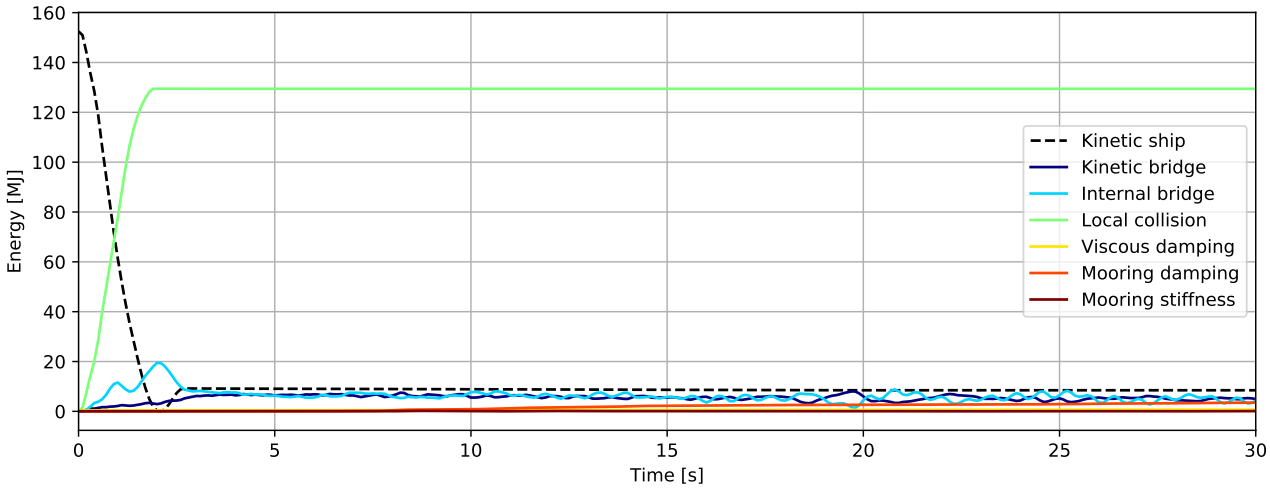

Figure 3.783: Energy [MJ] - initial phase

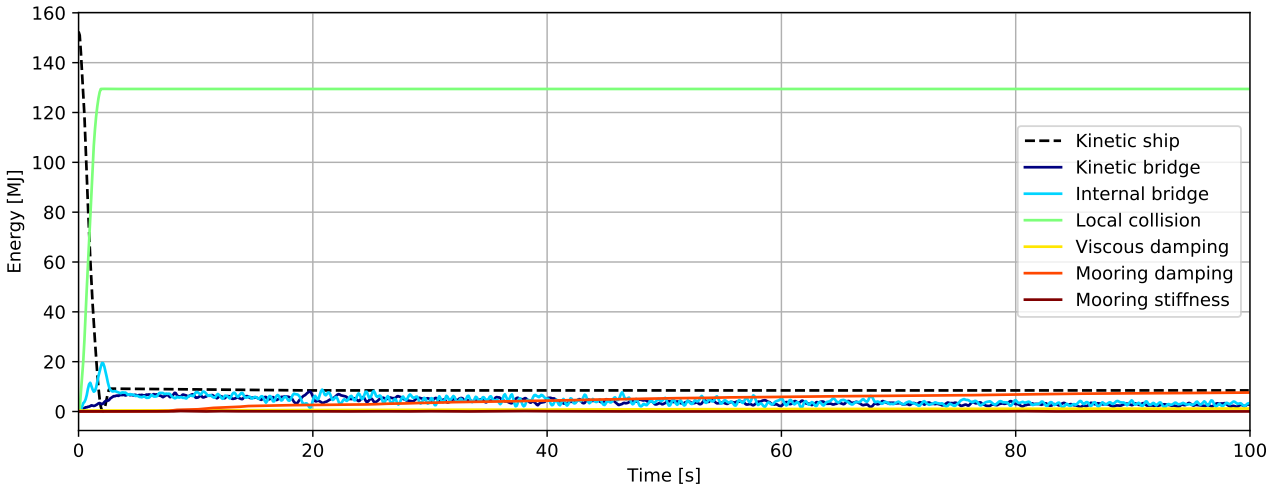

Figure 3.784: Energy [MJ]

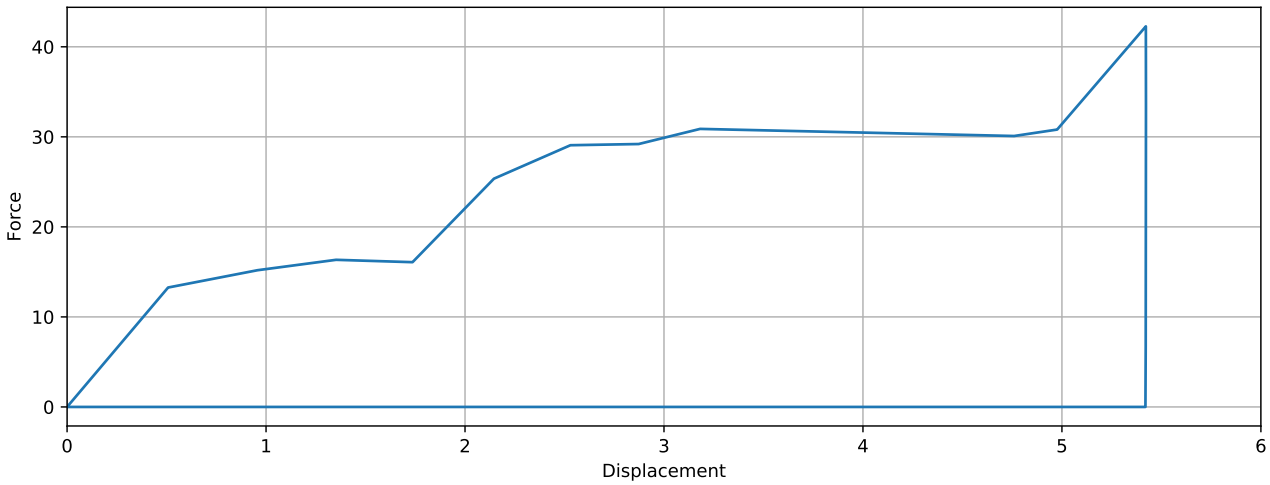

Figure 3.785: Simulated local collision force-displacement

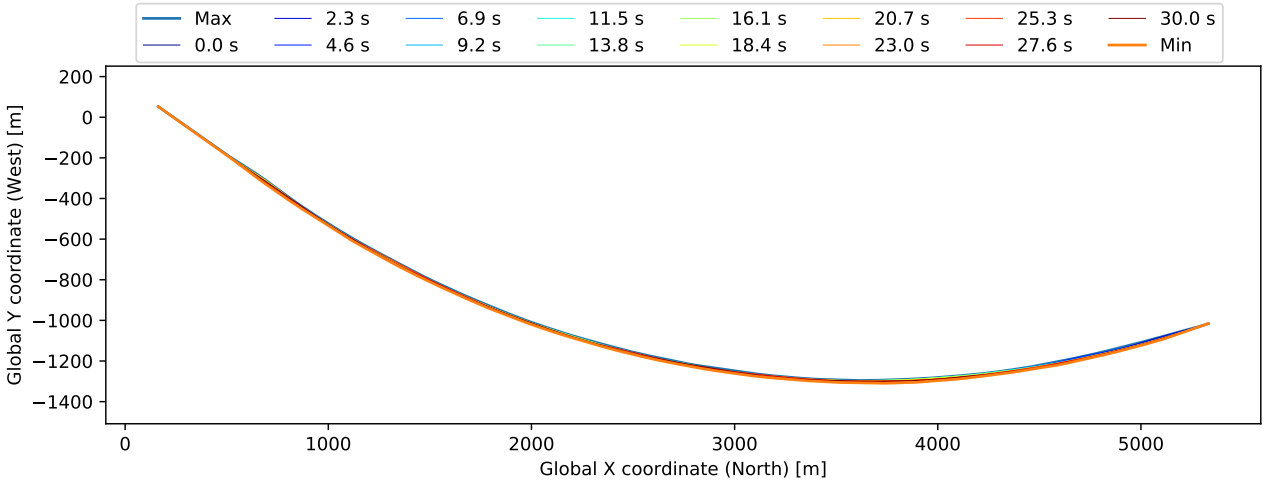

Figure 3.786: Bridgegirder deflection (10x displacment scaling)

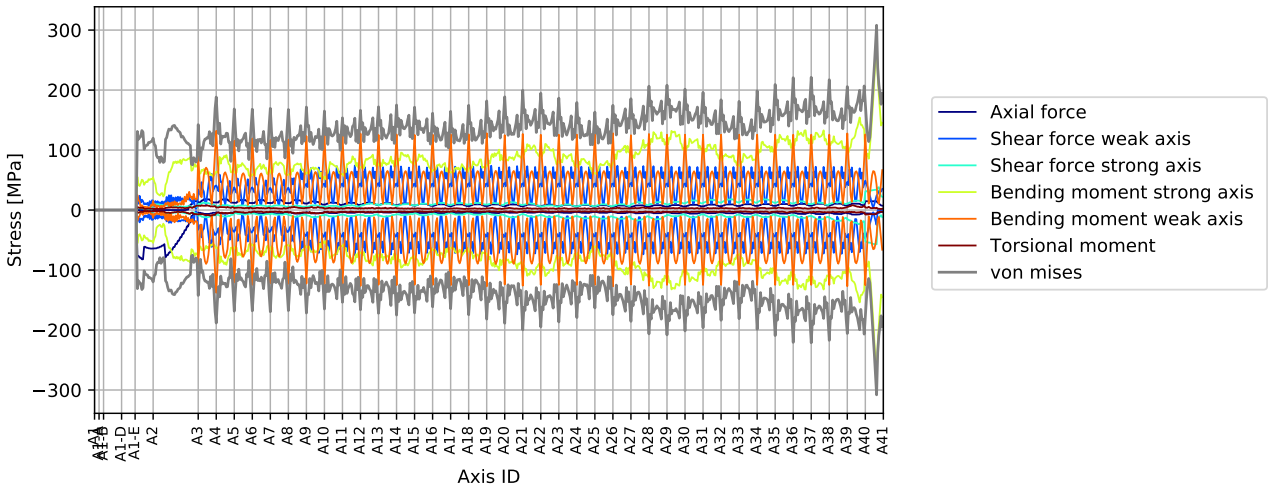

Figure 3.787: Stress envelope from all force components

3.18.2 Envelope plots

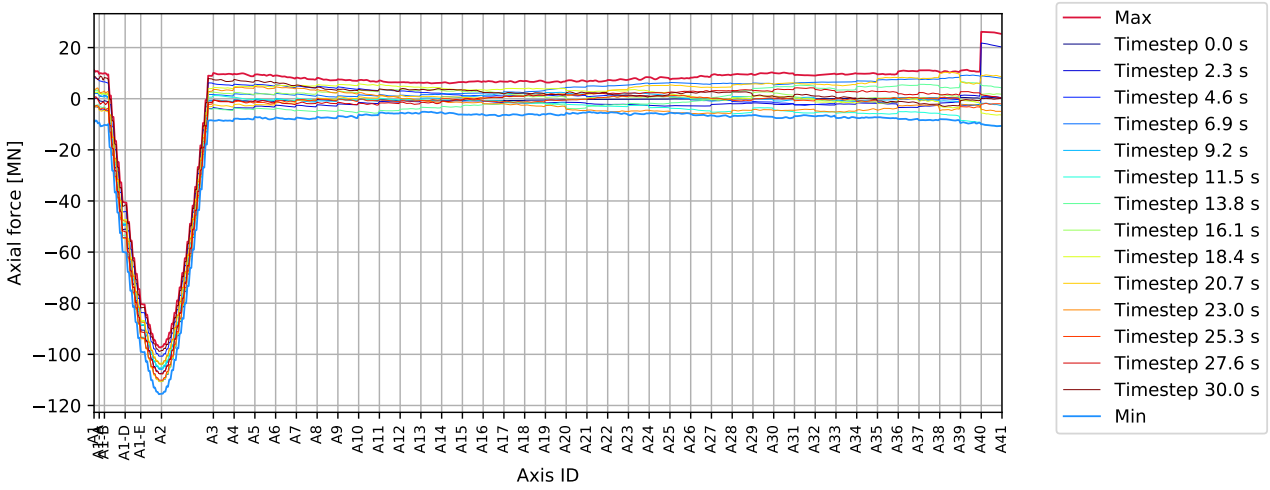

Figure 3.788: P A40 45deg - bridgegirder : Axial force [MN]

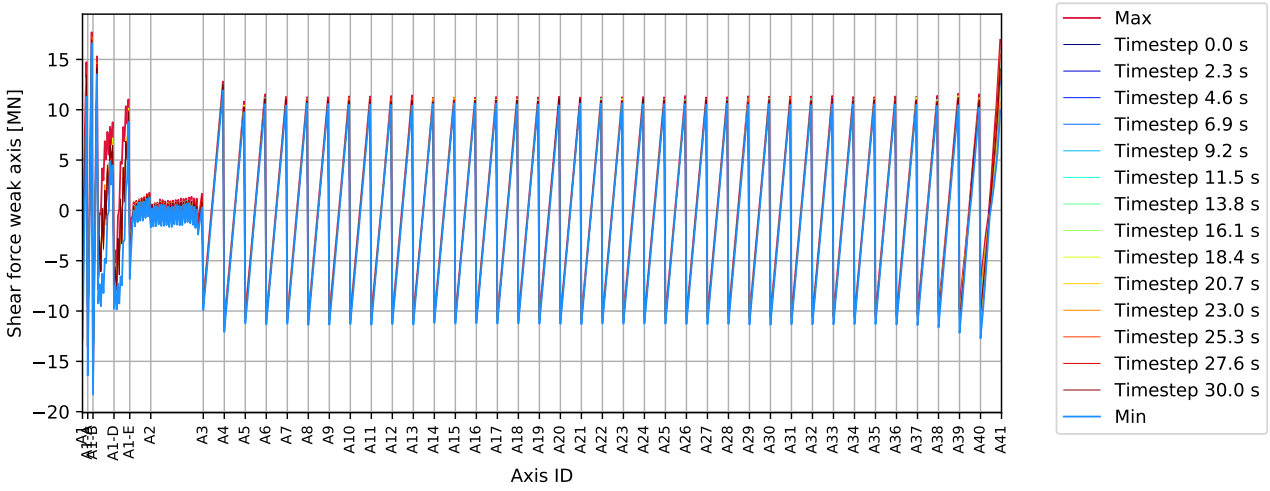

Figure 3.789: P A40 45deg - bridgegirder : Shear force weak axis [MN]

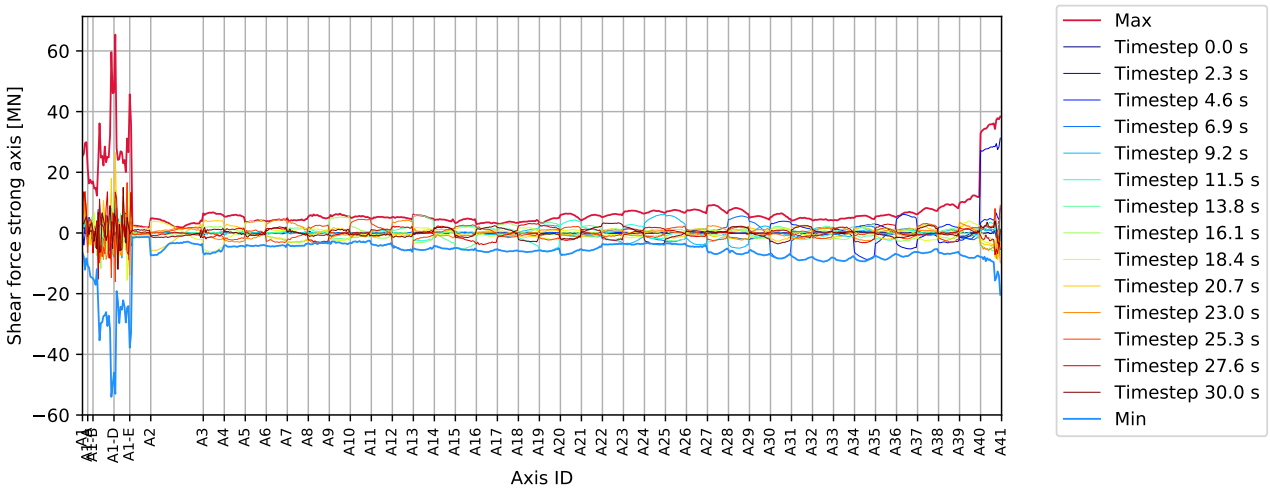

Figure 3.790: P A40 45deg - bridgegirder : Shear force strong axis [MN]

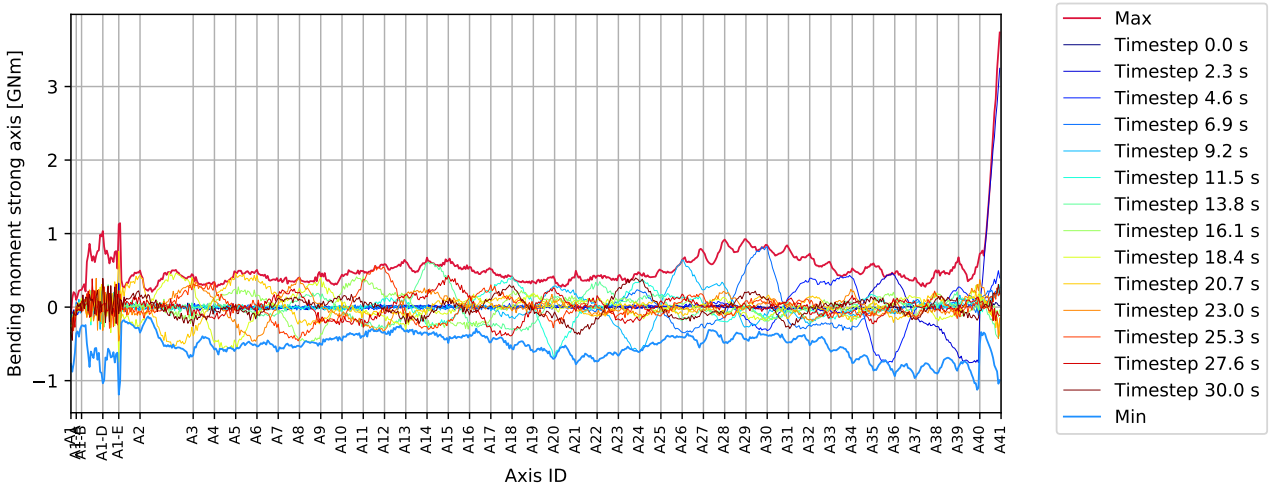

Figure 3.791: P A40 45deg - bridgegirder : Bending moment strong axis [GNm]

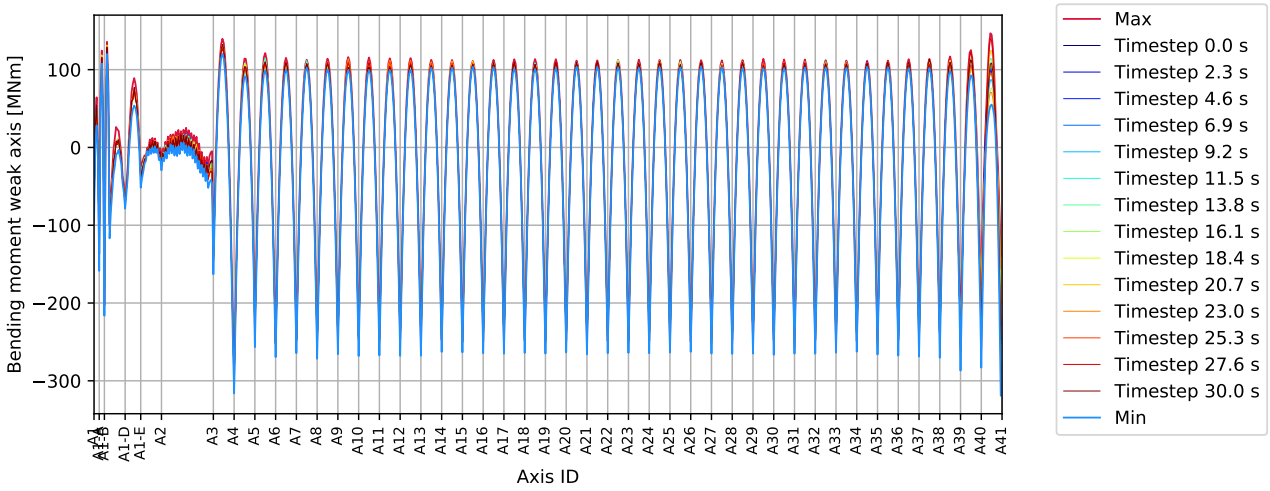

Figure 3.792: P A40 45deg - bridgegirder : Bending moment weak axis [MNm]

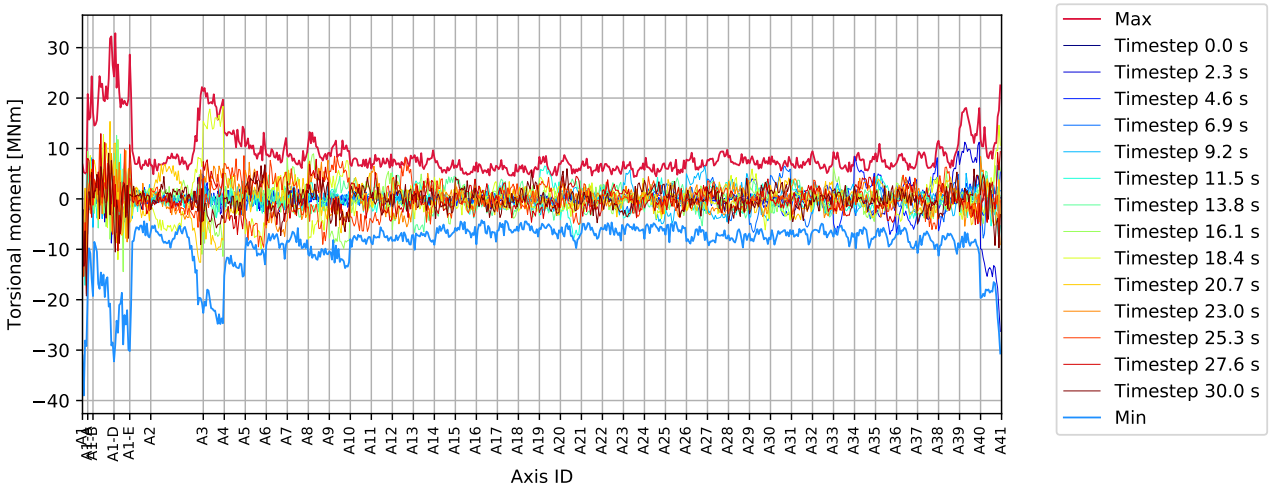

Figure 3.793: P A40 45deg - bridgegirder : Torsional moment [MNm]

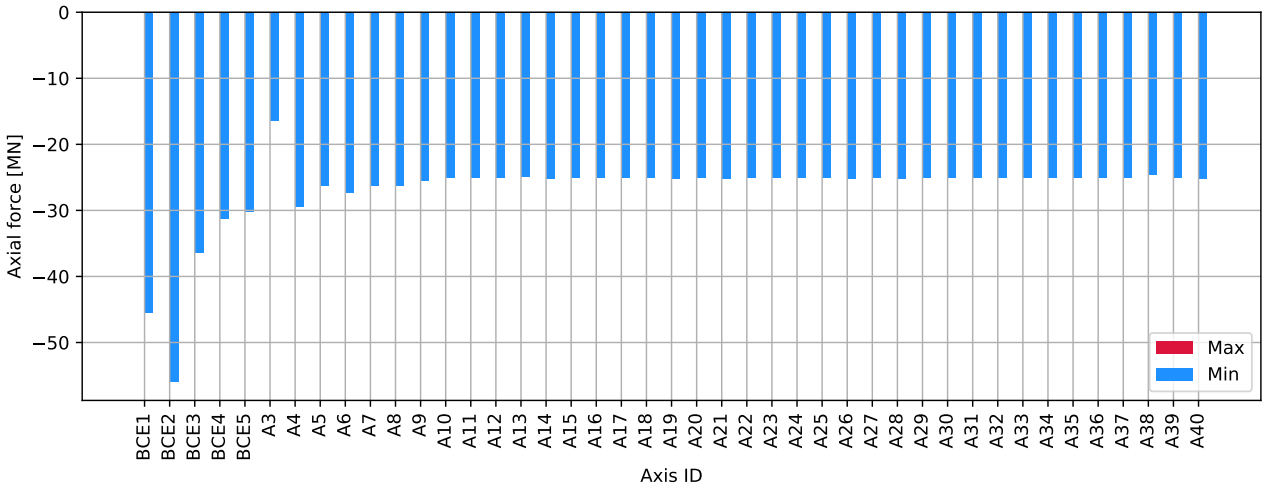

Figure 3.794: P A40 45deg - columns bottom : Axial force [MN]

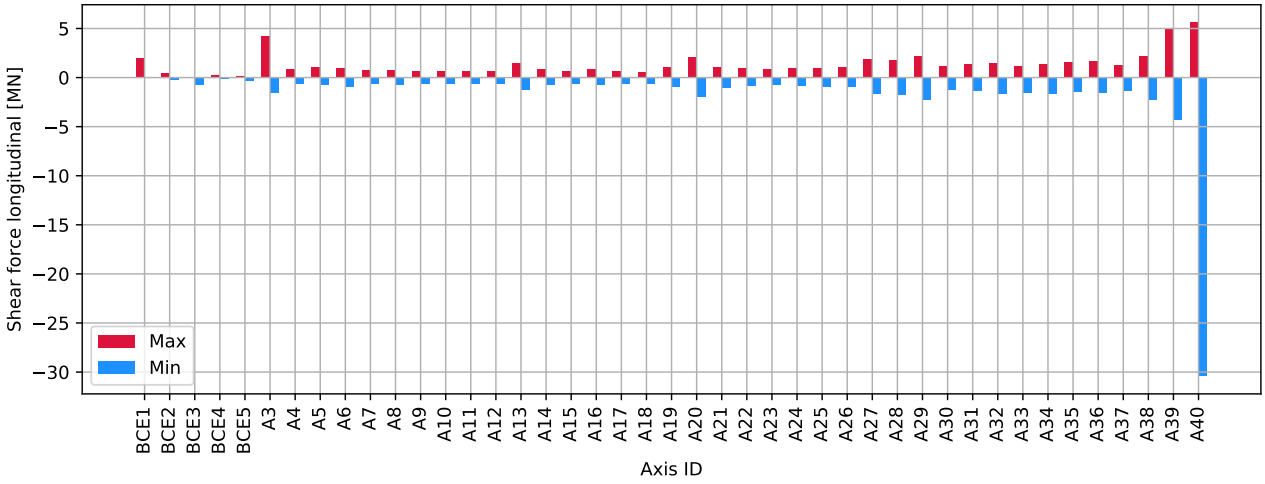

Figure 3.795: P A40 45deg - columns bottom : Shear force longitudinal [MN]

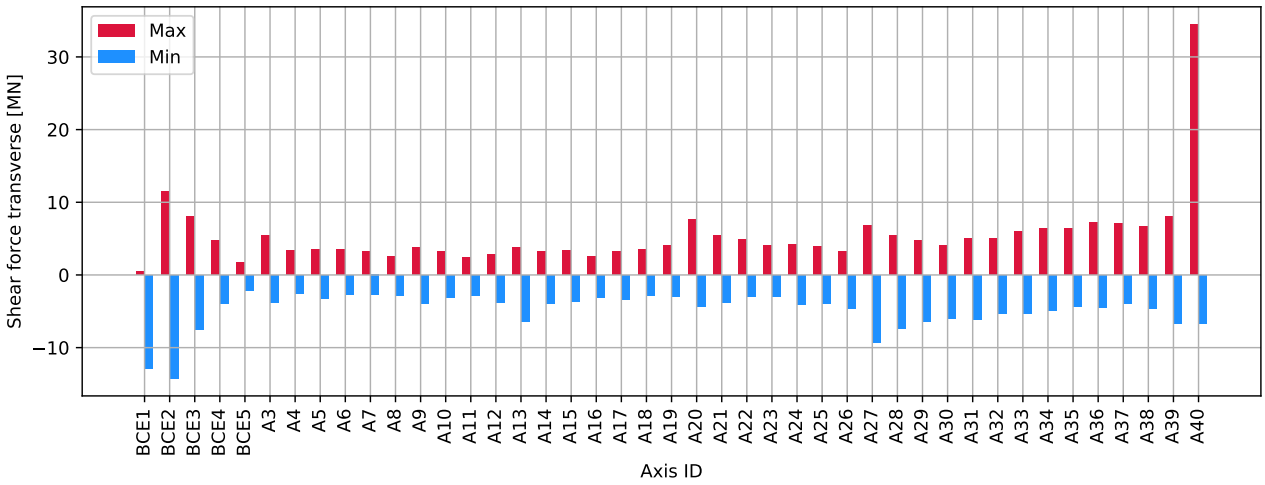

Figure 3.796: P A40 45deg - columns bottom : Shear force transverse [MN]

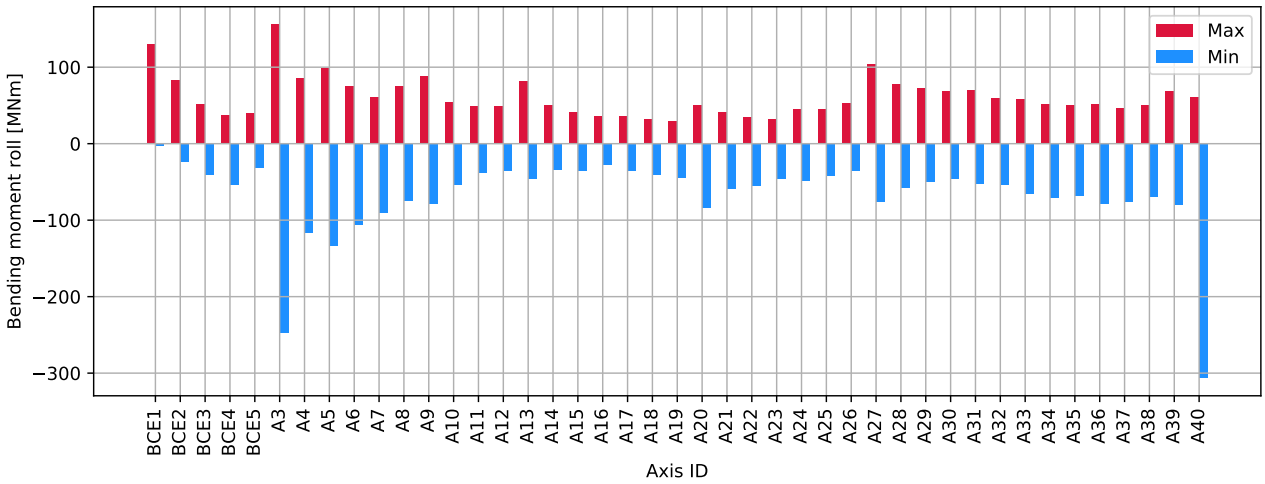

Figure 3.797: P A40 45deg - columns bottom : Bending moment roll [MNm]

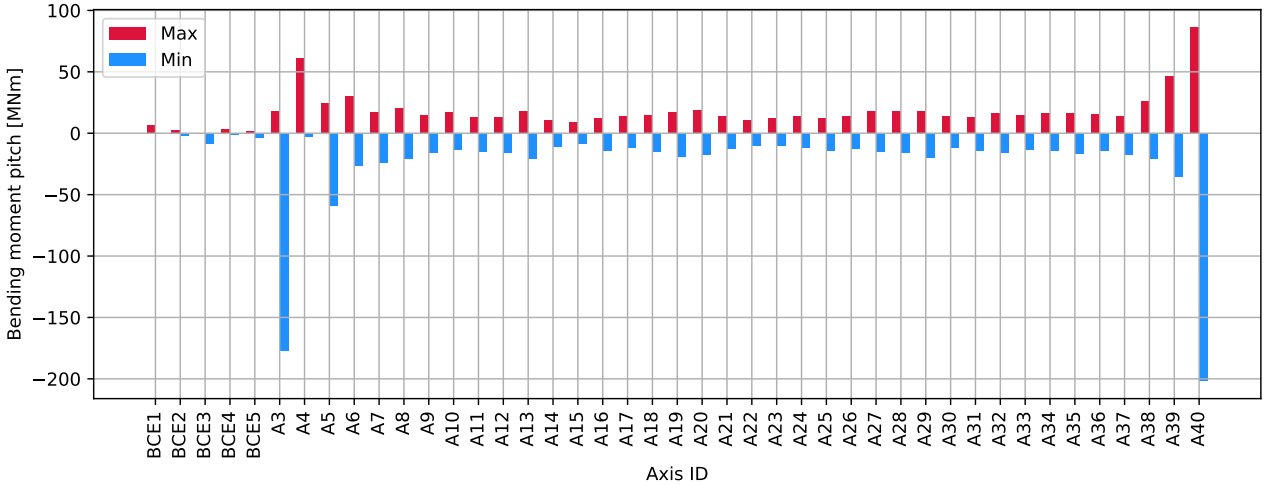

Figure 3.798: P A40 45deg - columns bottom : Bending moment pitch [MNm]

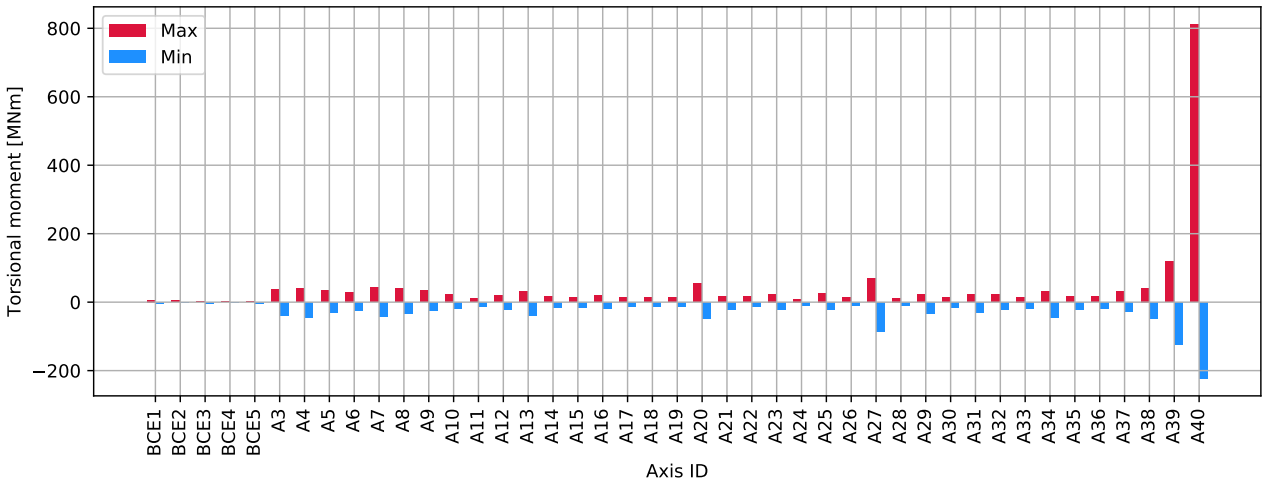

Figure 3.799: P A40 45deg - columns bottom : Torsional moment [MNm]

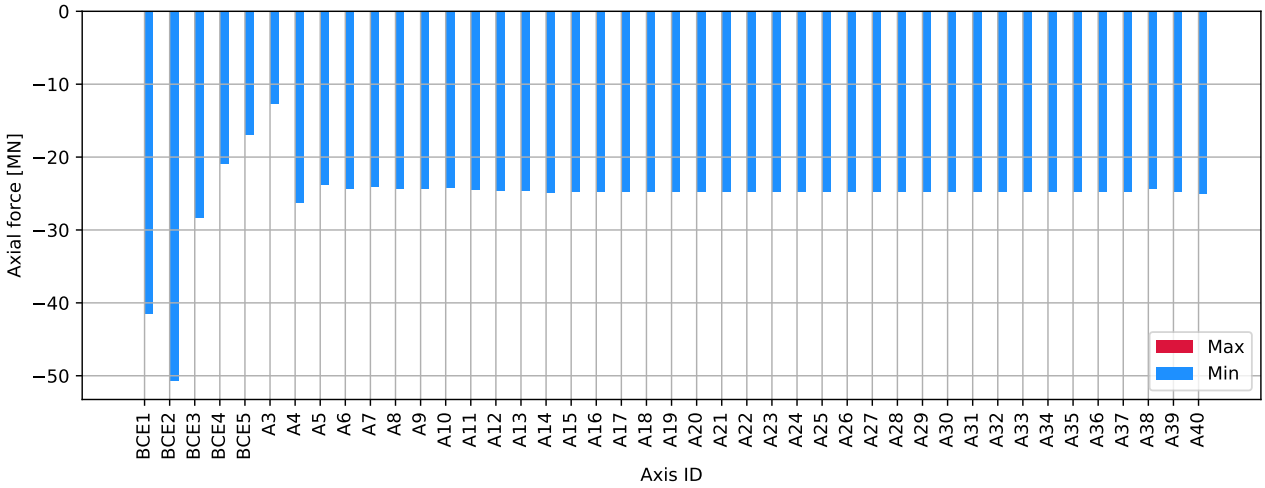

Figure 3.800: P A40 45deg - columns top : Axial force [MN]

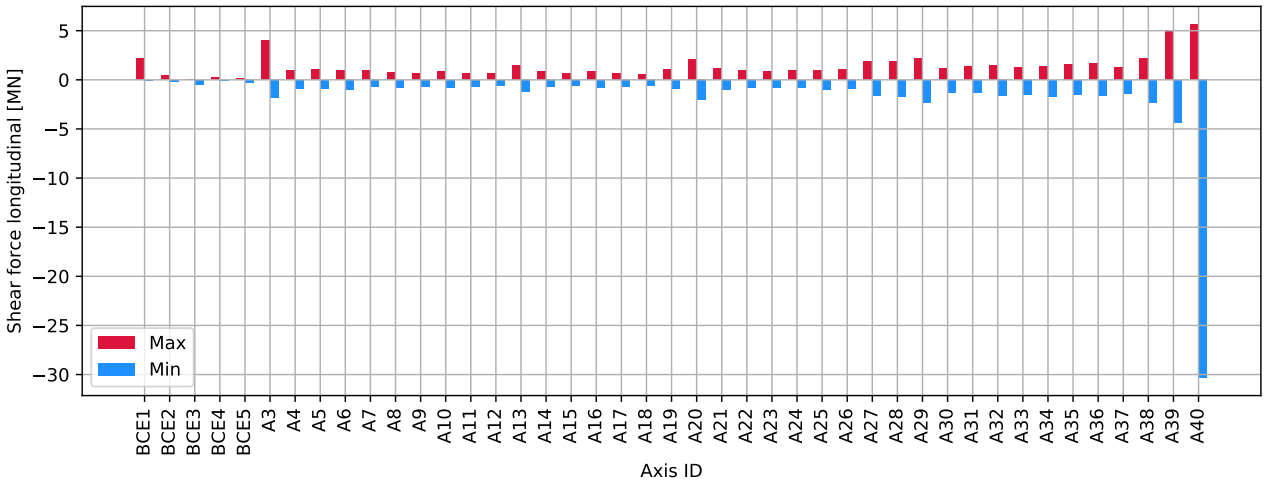

Figure 3.801: P A40 45deg - columns top : Shear force longitudinal [MN]

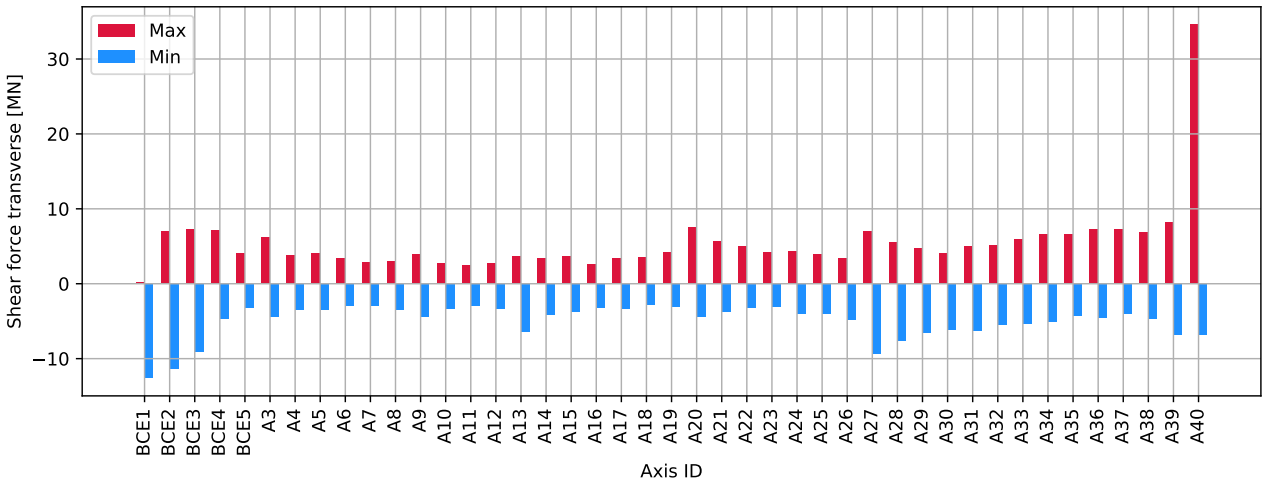

Figure 3.802: P A40 45deg - columns top : Shear force transverse [MN]

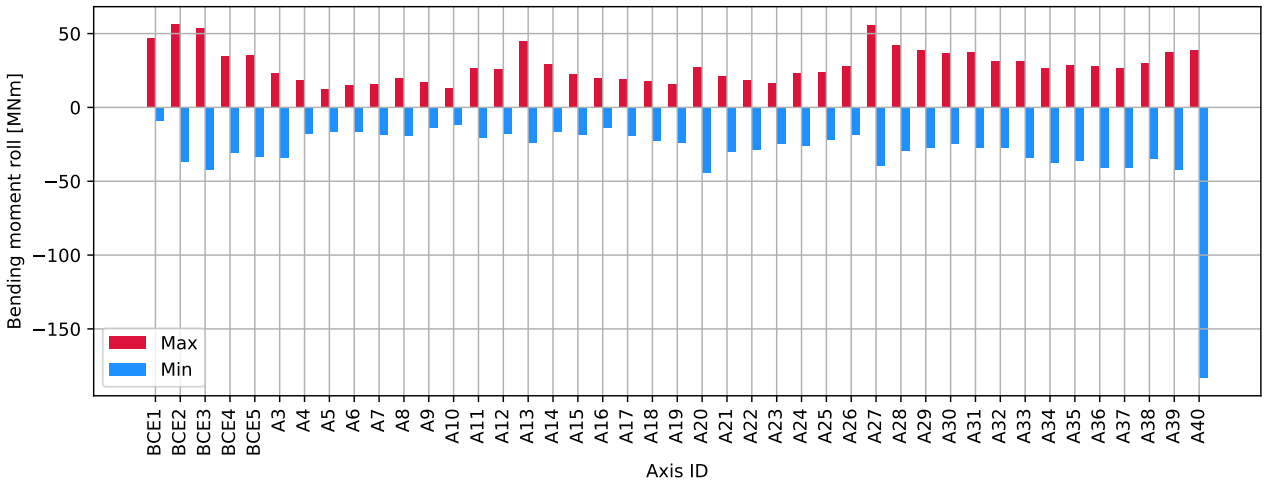

Figure 3.803: P A40 45deg - columns top : Bending moment roll [MNm]

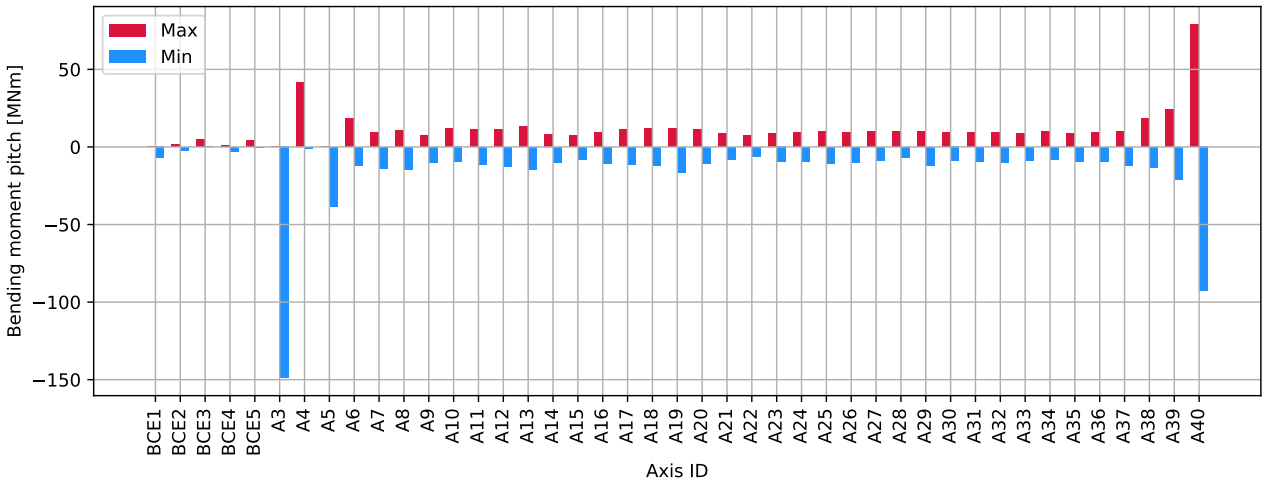

Figure 3.804: P A40 45deg - columns top : Bending moment pitch [MNm]

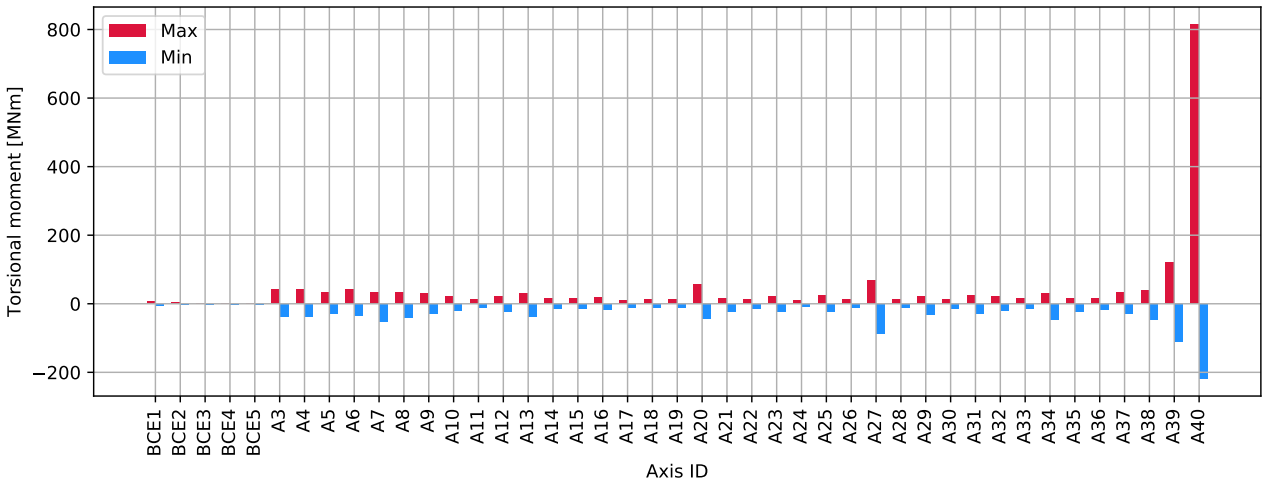

Figure 3.805: P A40 45deg - columns top : Torsional moment [MNm]

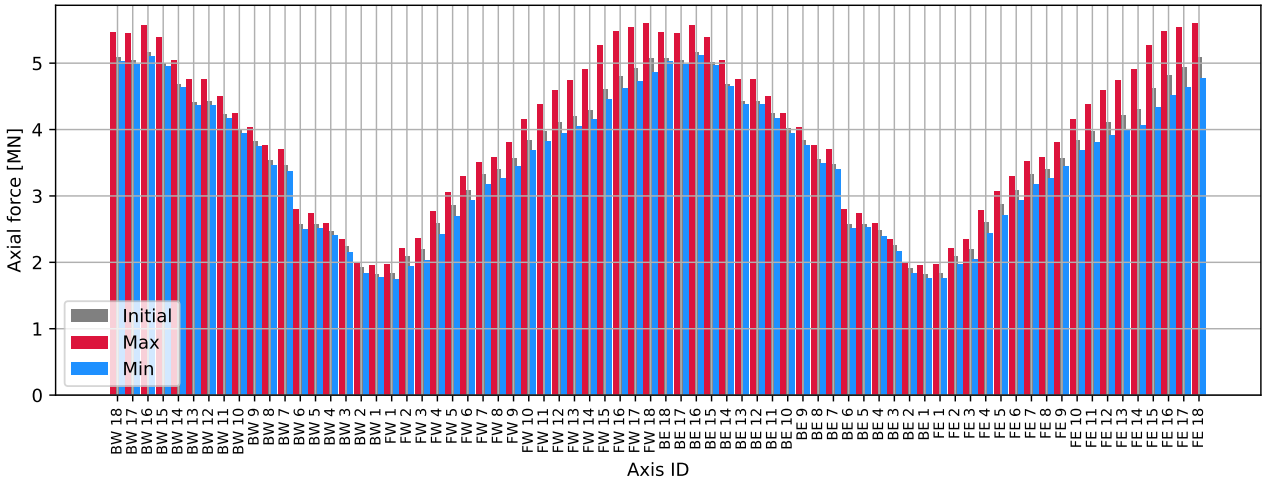

Figure 3.806: P A40 45deg - cables : Axial force [MN]

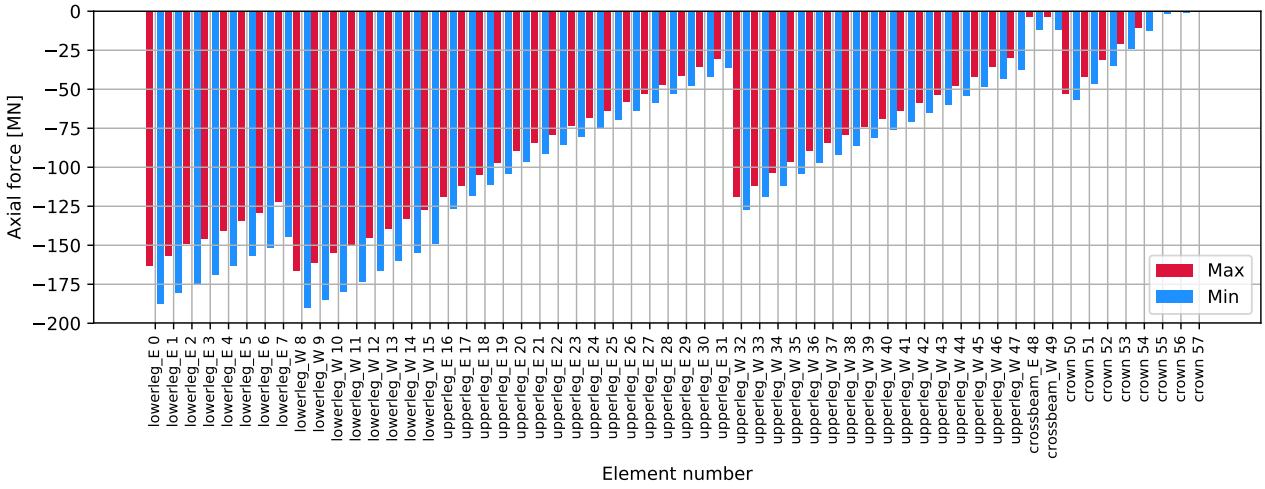

Figure 3.807: P A40 45deg - tower: Axial force [MN]

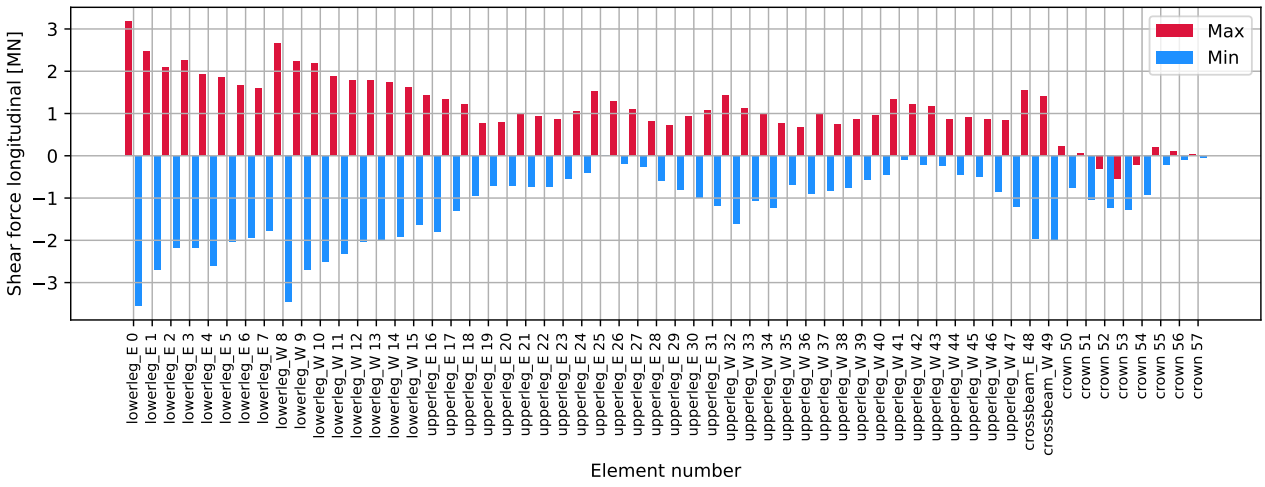

Figure 3.808: P A40 45deg - tower: Shear force longitudinal [MN]

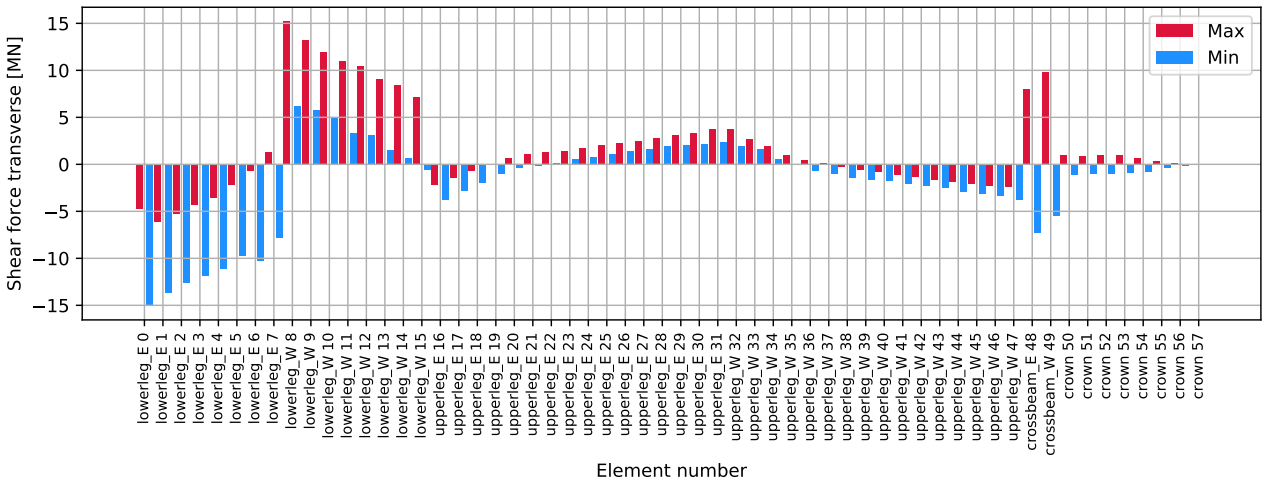

Figure 3.809: P A40 45deg - tower: Shear force transverse [MN]

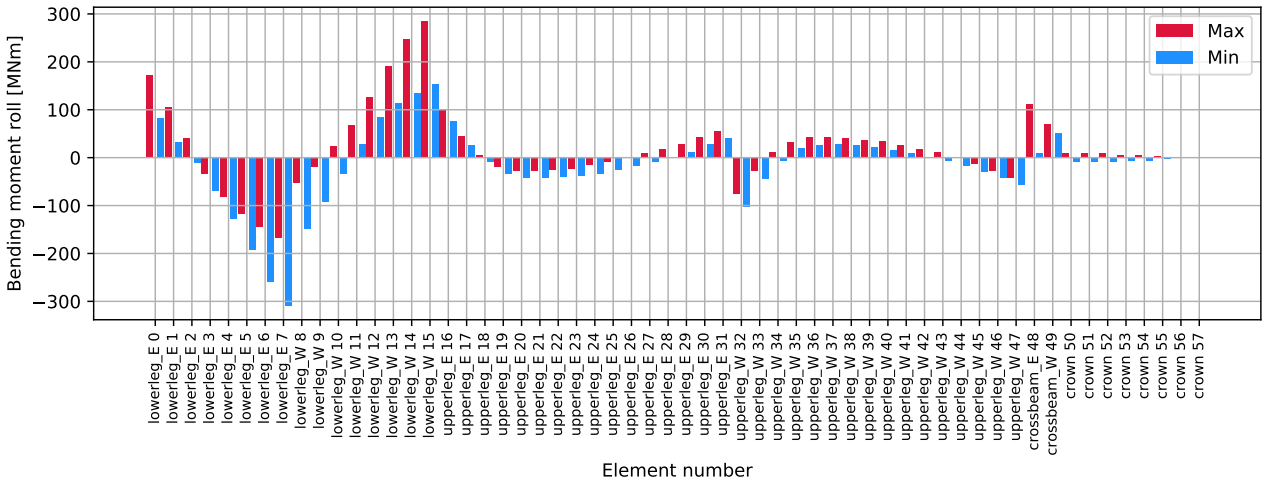

Figure 3.810: P A40 45deg - tower: Bending moment roll [MNm]

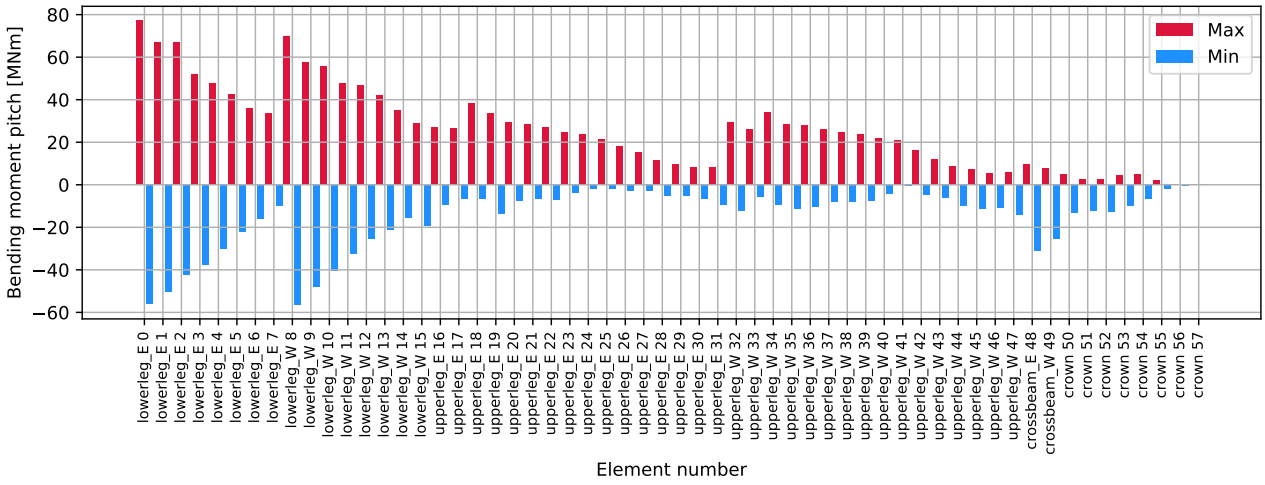

Figure 3.811: P A40 45deg - tower: Bending moment pitch [MNm]

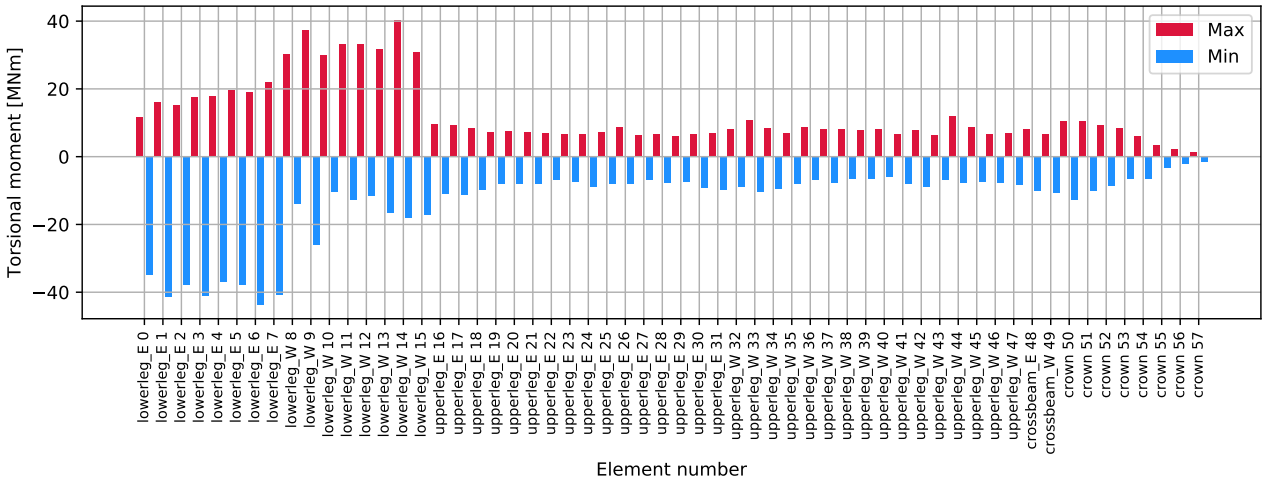

Figure 3.812: P A40 45deg - tower: Torsional moment [MNm]

3.18.3 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

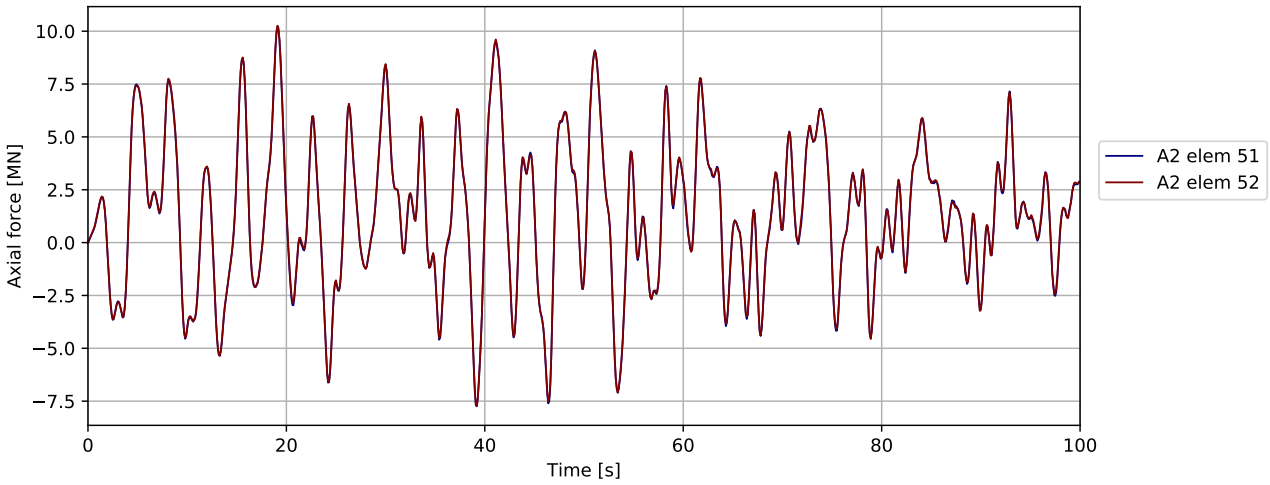

Figure 3.813: P A40 45deg - bridgegirder @ pylon: Axial force [MN]

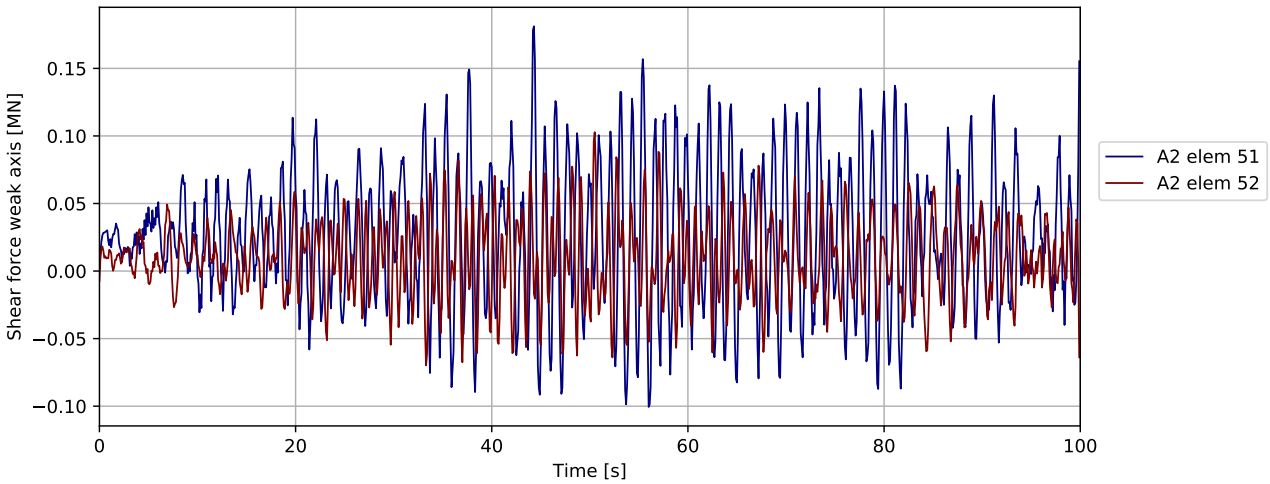

Figure 3.814: P A40 45deg - bridgegirder @ pylon: Shear force weak axis [MN]

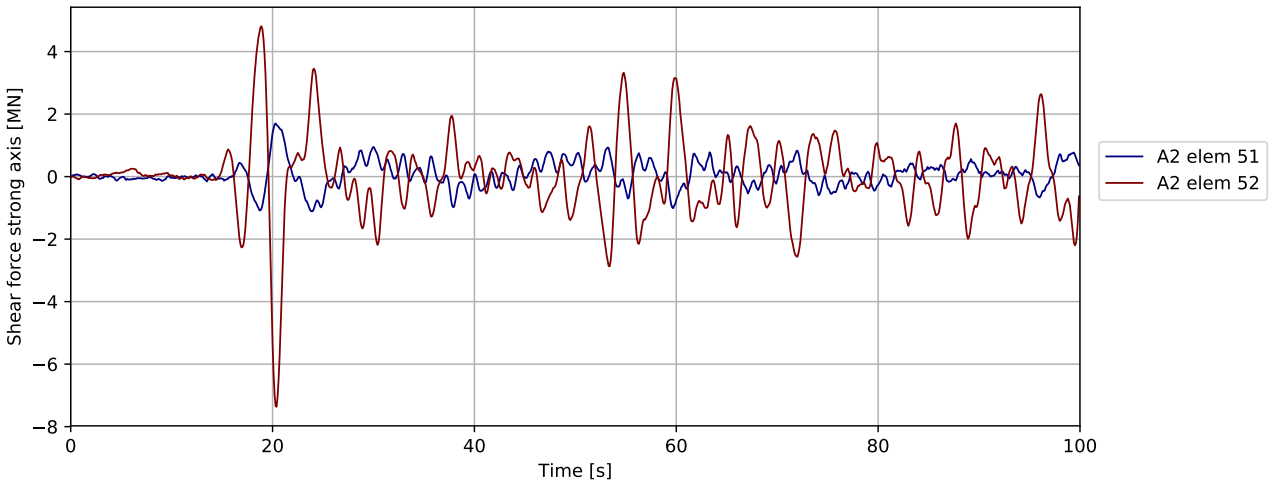

Figure 3.815: P A40 45deg - bridgegirder @ pylon: Shear force strong axis [MN]

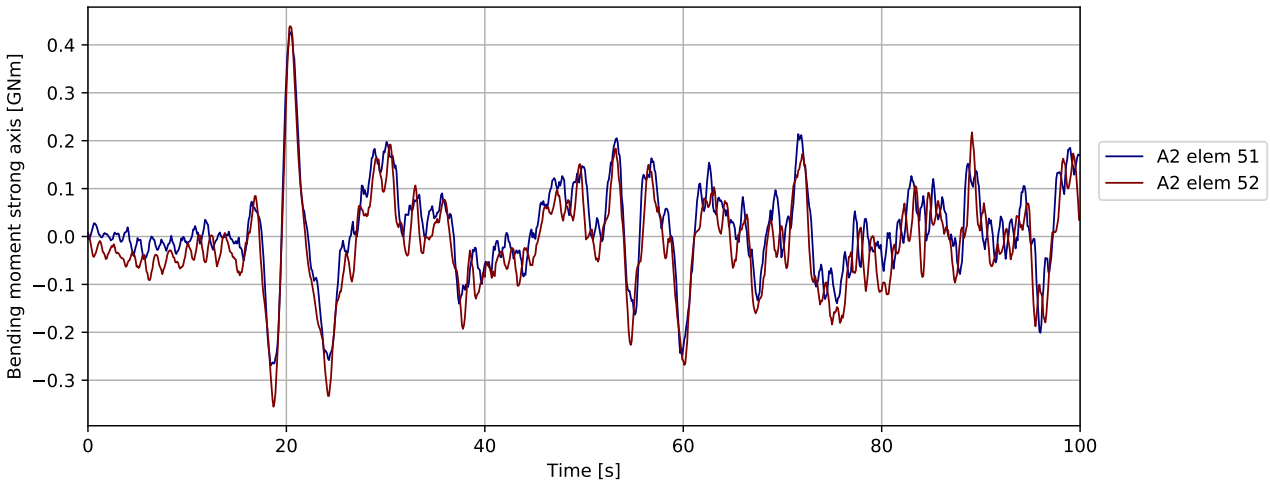

Figure 3.816: P A40 45deg - bridgegirder @ pylon: Bending moment strong axis [GNm]

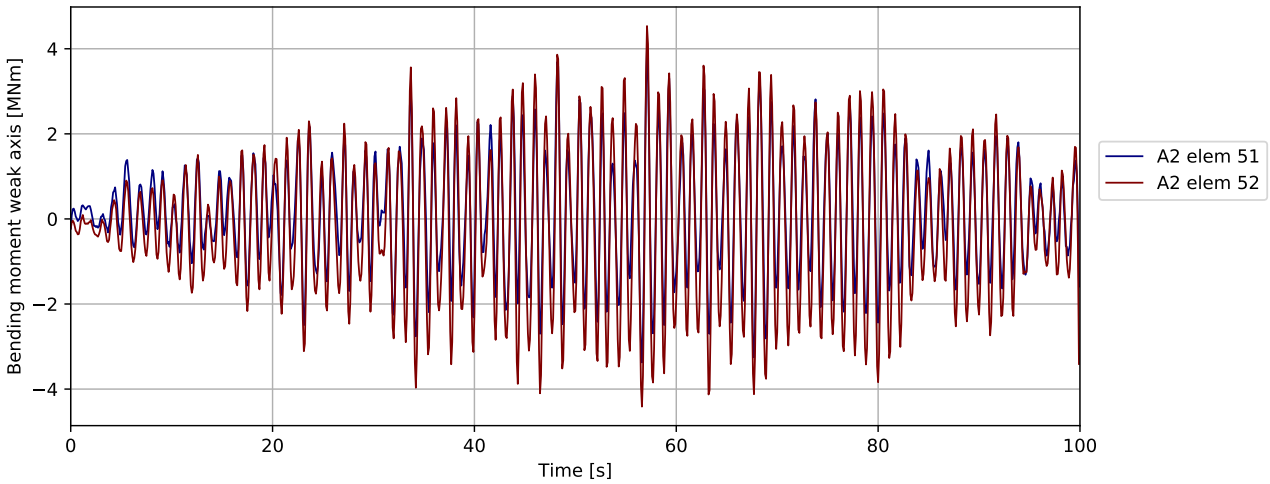

Figure 3.817: P A40 45deg - bridgegirder @ pylon: Bending moment weak axis [MNm]

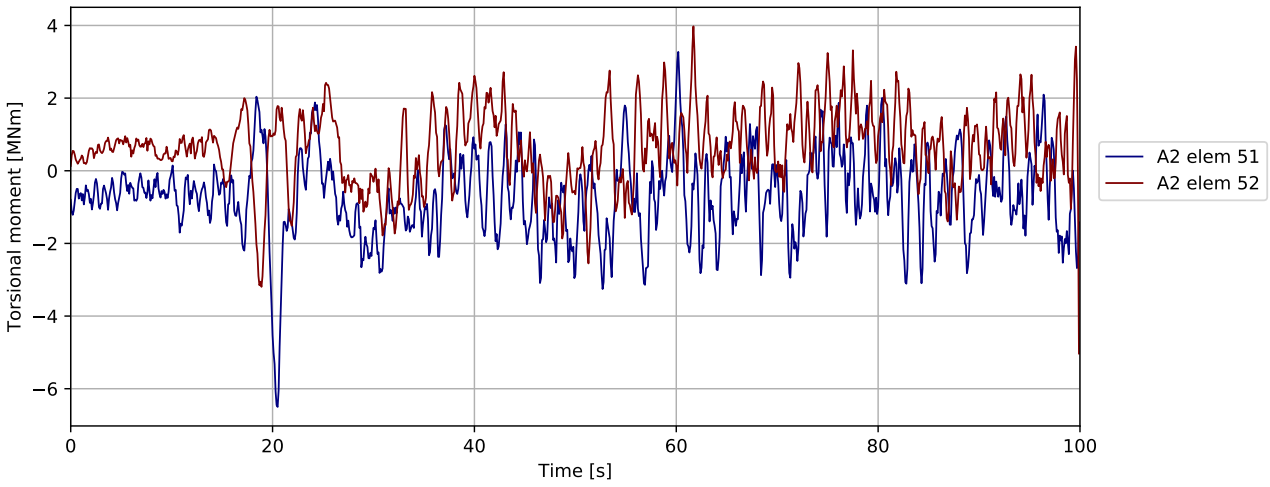

Figure 3.818: P A40 45deg - bridgegirder @ pylon: Torsional moment [MNm]

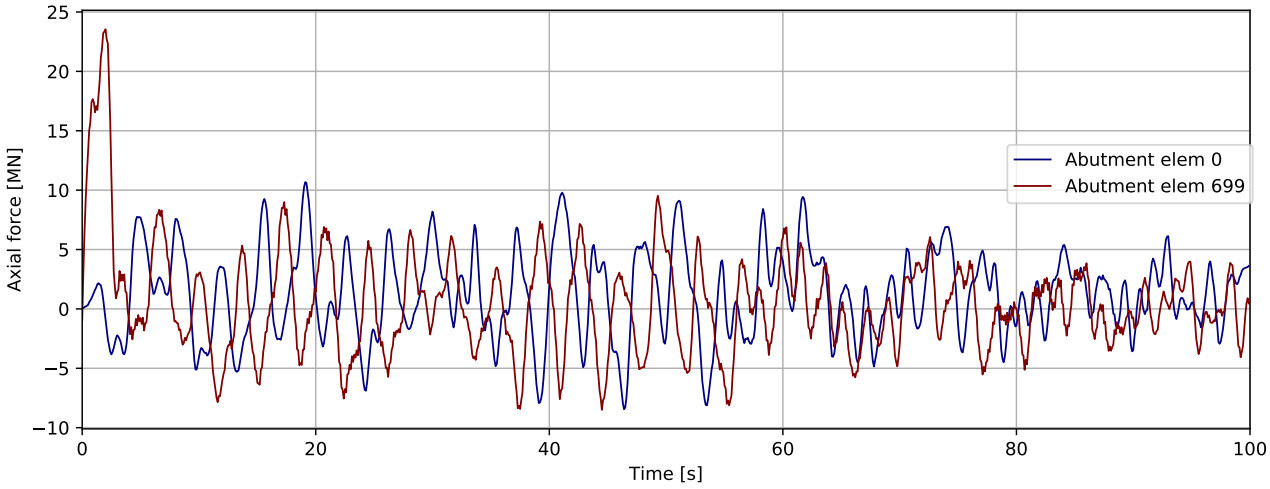

Figure 3.819: P A40 45deg - bridgegirder @abutments: Axial force [MN]

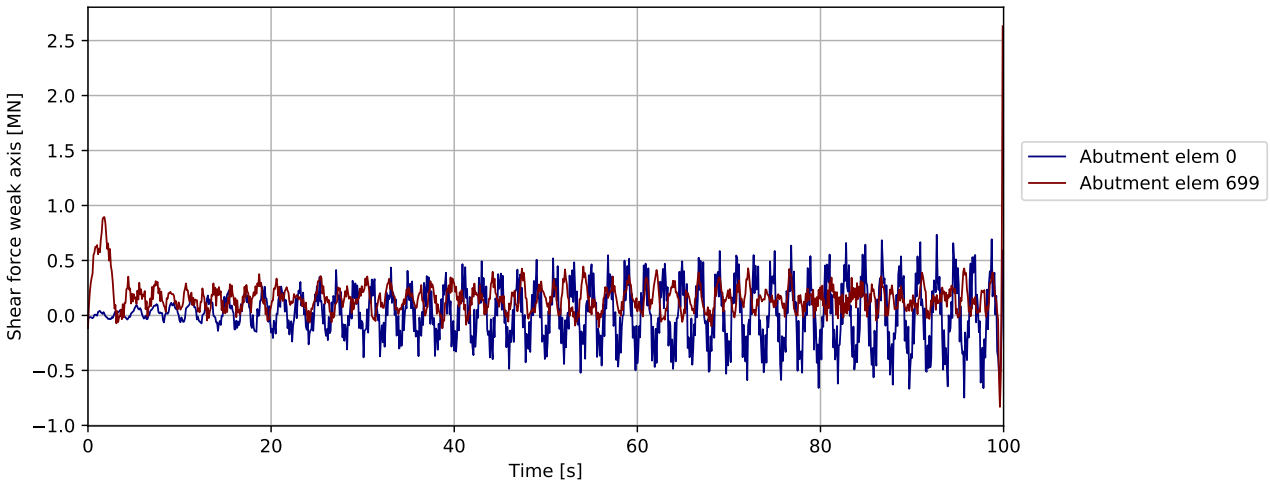

Figure 3.820: P A40 45deg - bridgegirder @abutments: Shear force weak axis [MN]

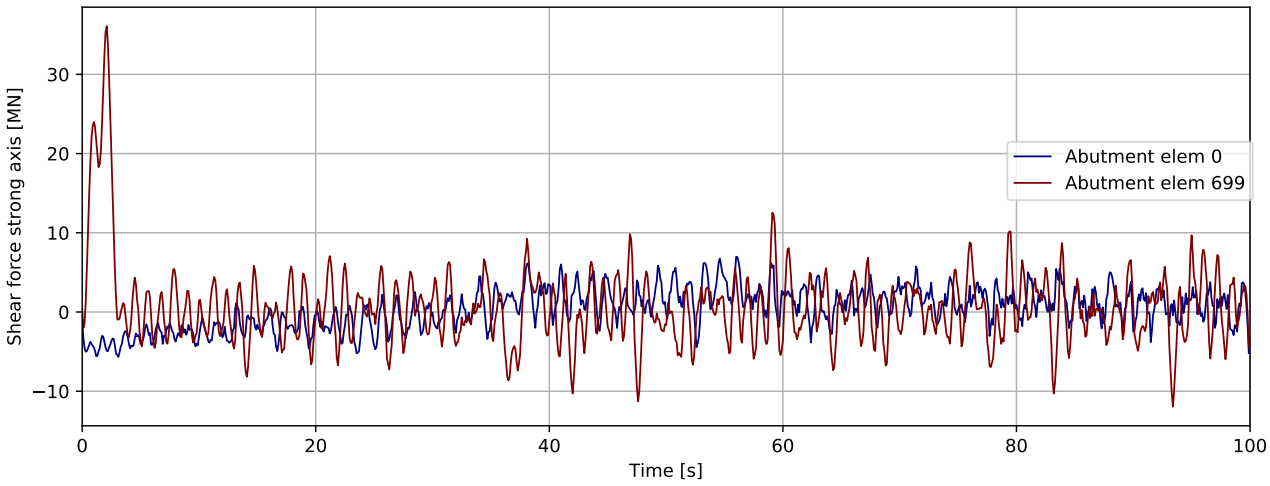

Figure 3.821: P A40 45deg - bridgegirder @abutments: Shear force strong axis [MN]

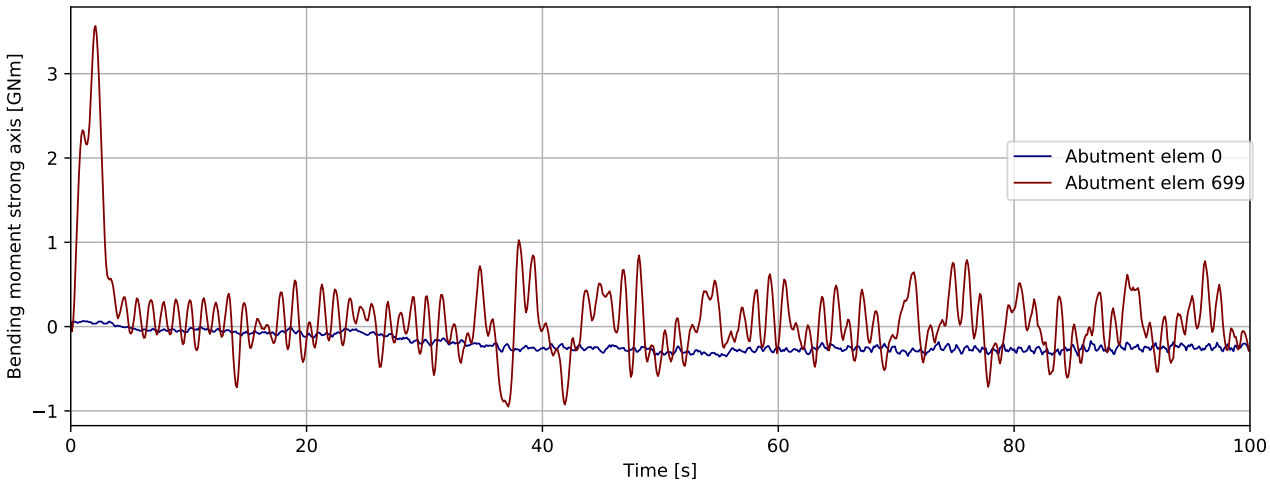

Figure 3.822: P A40 45deg - bridgegirder @abutments: Bending moment strong axis [GNm]

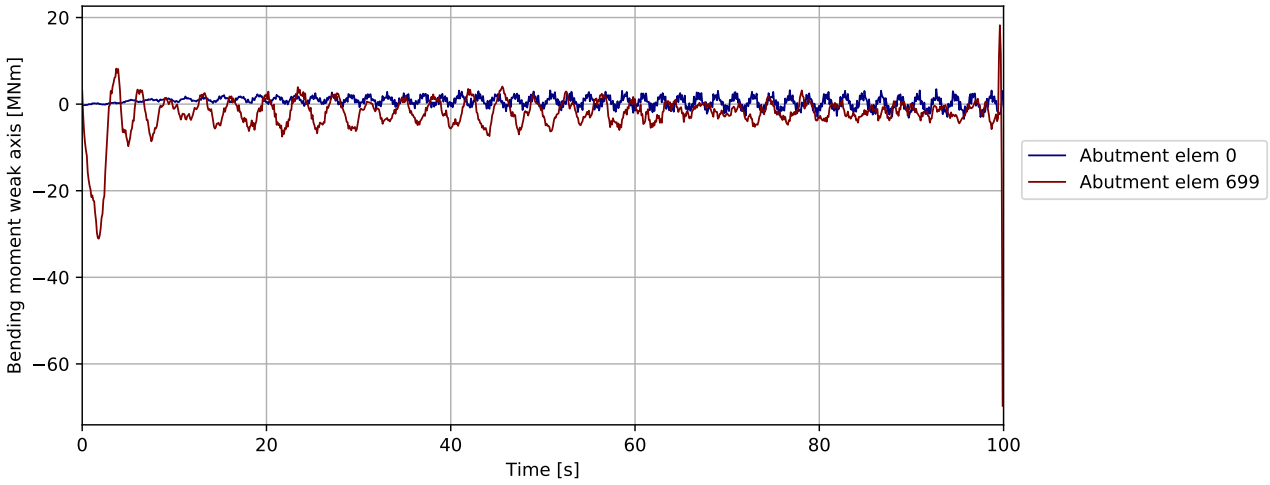

Figure 3.823: P A40 45deg - bridgegirder @abutments: Bending moment weak axis [MNm]

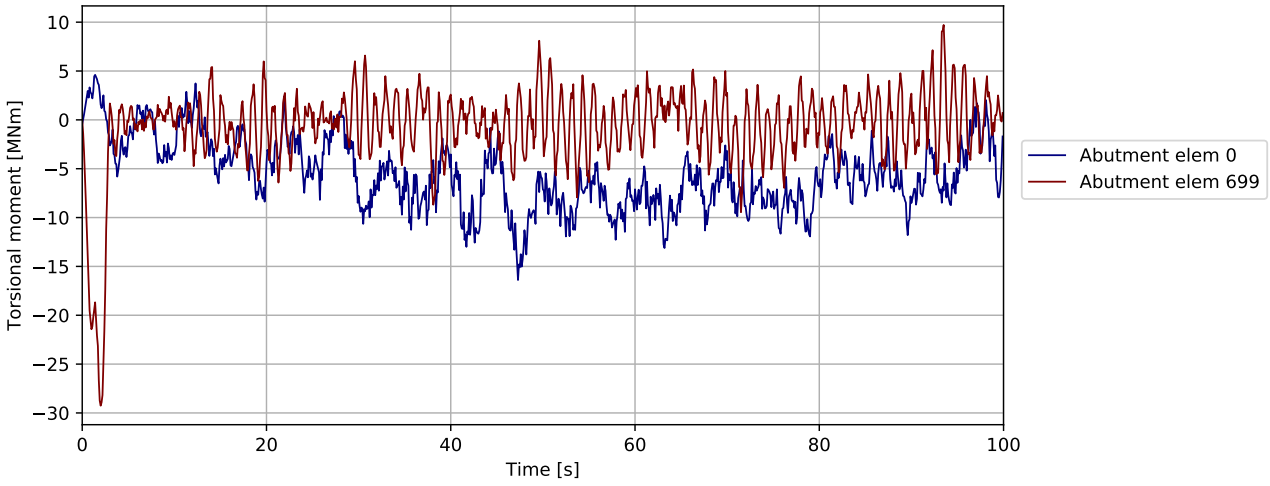

Figure 3.824: P A40 45deg - bridgegirder @abutments: Torsional moment [MNm]

Note : Compressive spring force is negative

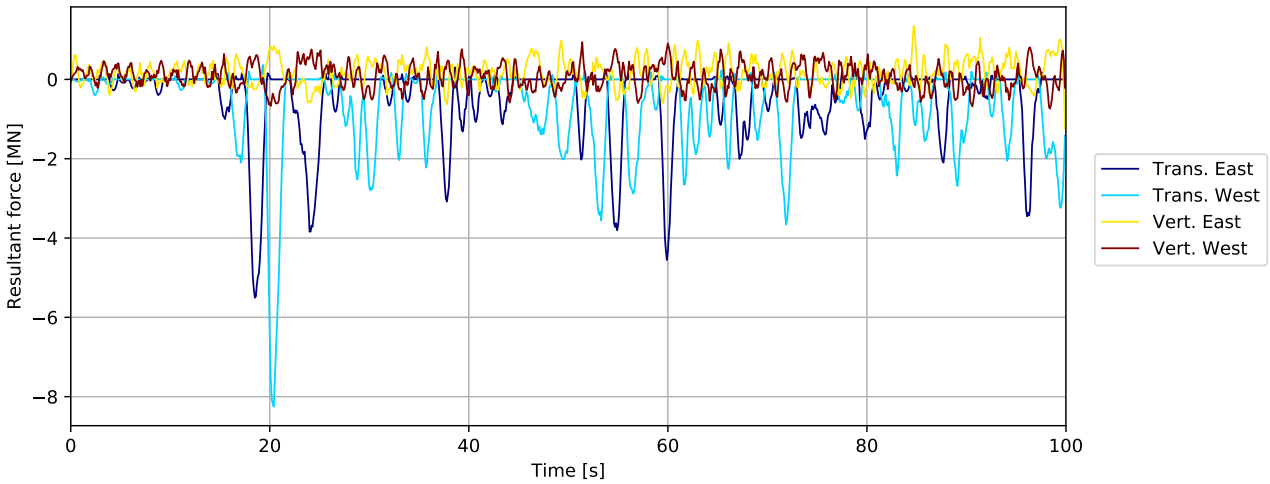

Figure 3.825: P A40 45deg - bridgegirder supports in tower: Resultant force [MN]

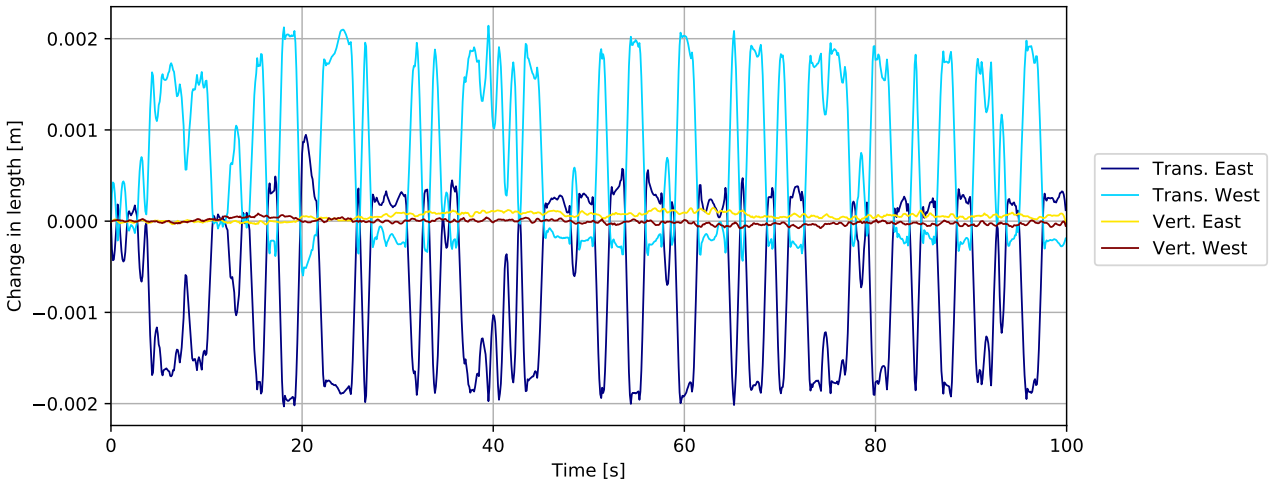

Figure 3.826: P A40 45deg - bridgegirder supports in tower: Change in length [m]

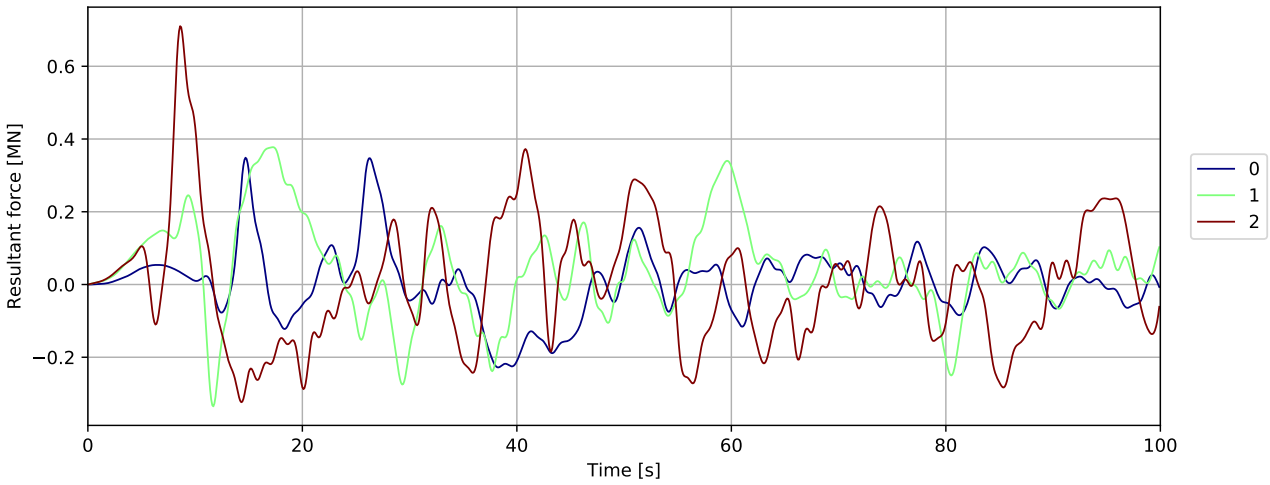

Figure 3.827: Mooring force

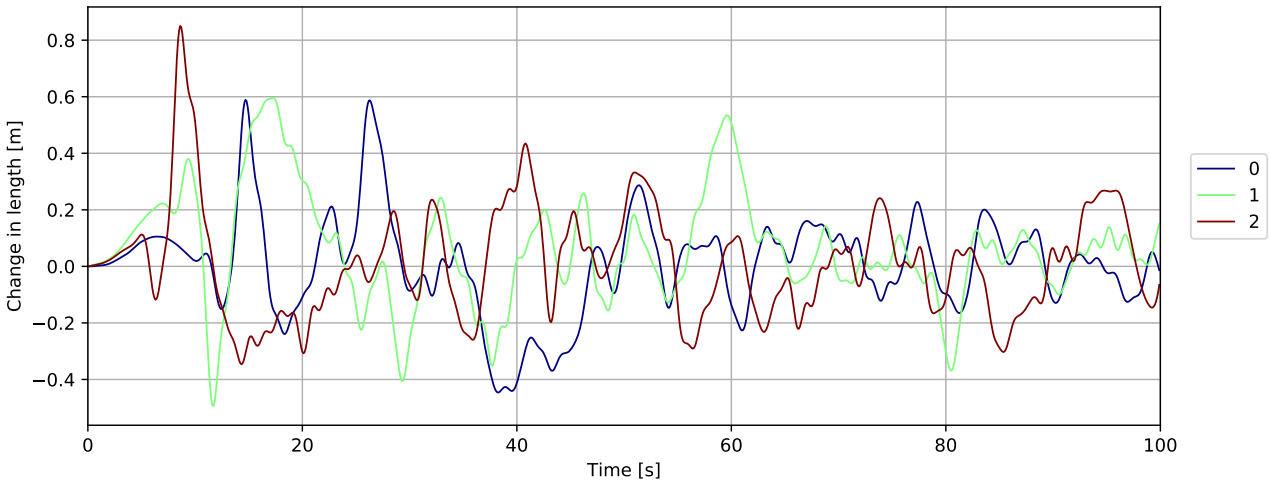

Figure 3.828: Mooring displacement

3.19 PontoonA3 80deg

3.19.1 Overall response

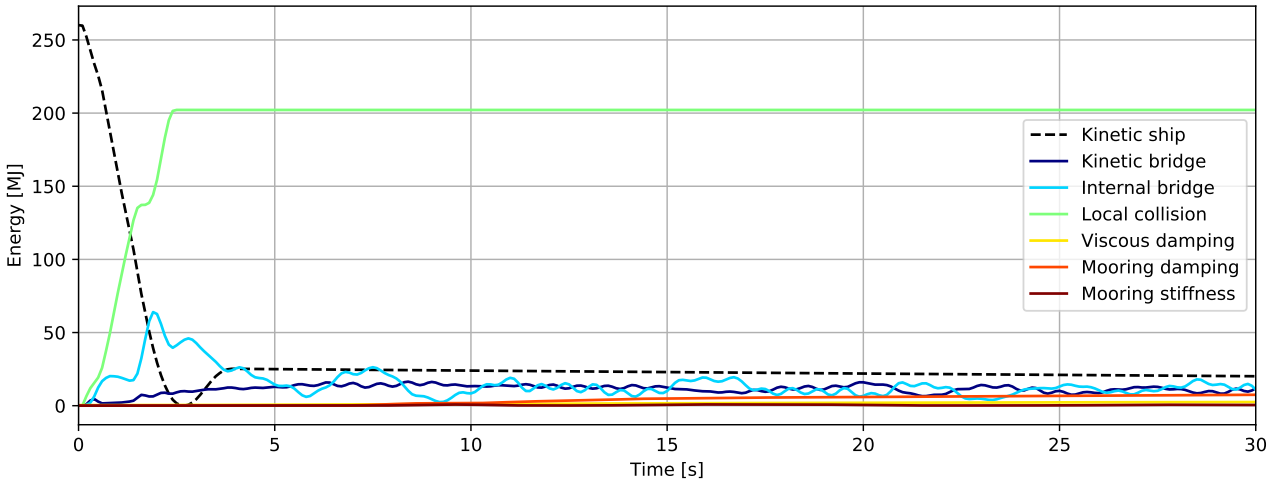

Figure 3.829: Energy [MJ] - initial phase

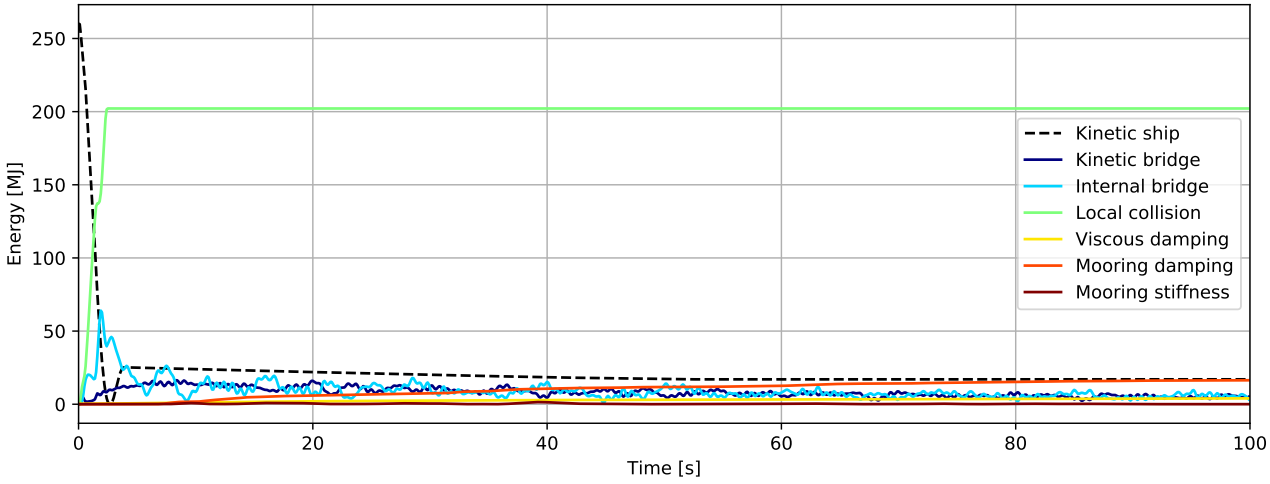

Figure 3.830: Energy [MJ]

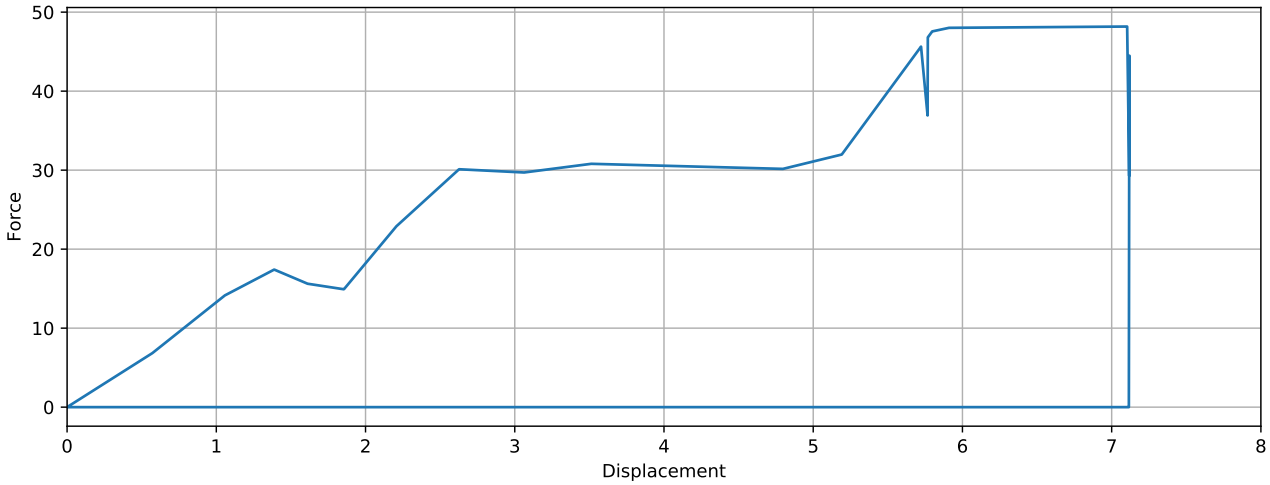

Figure 3.831: Simulated local collision force-displacement

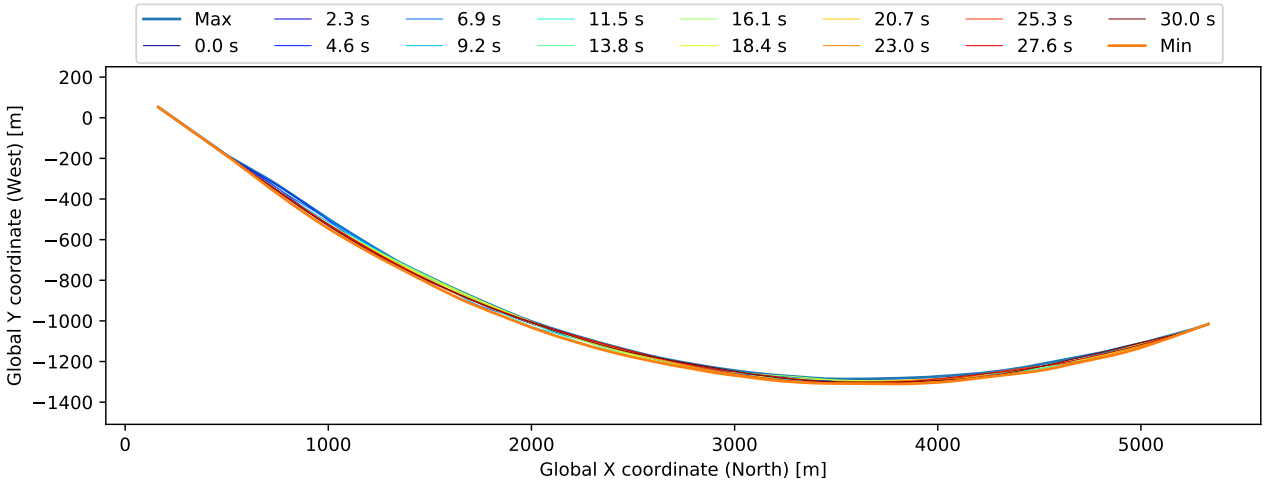

Figure 3.832: Bridgegirder deflection (10x displacment scaling)

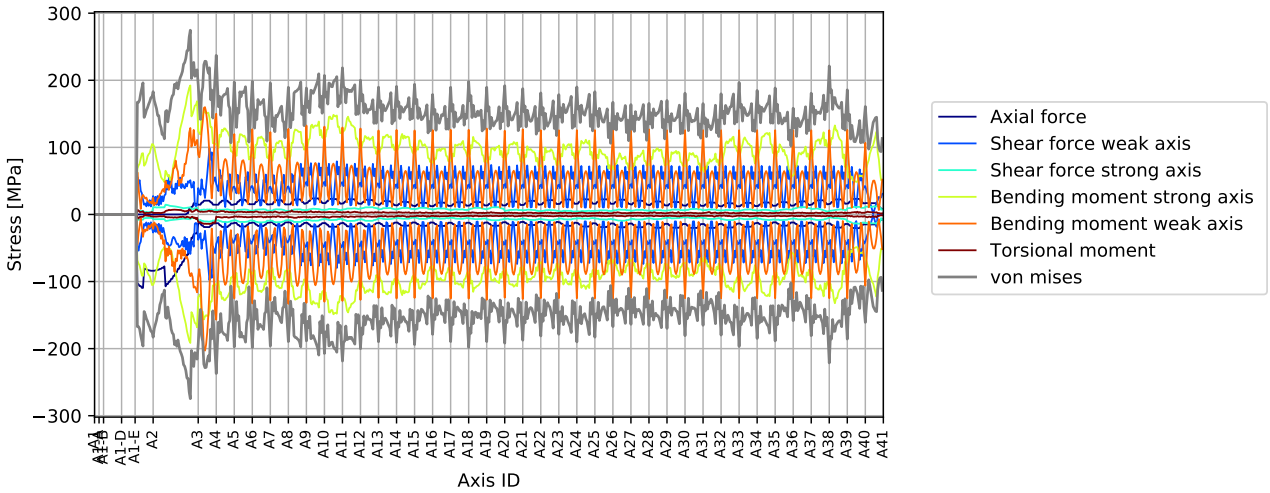

Figure 3.833: Stress envelope from all force components

3.19.2 Envelope plots

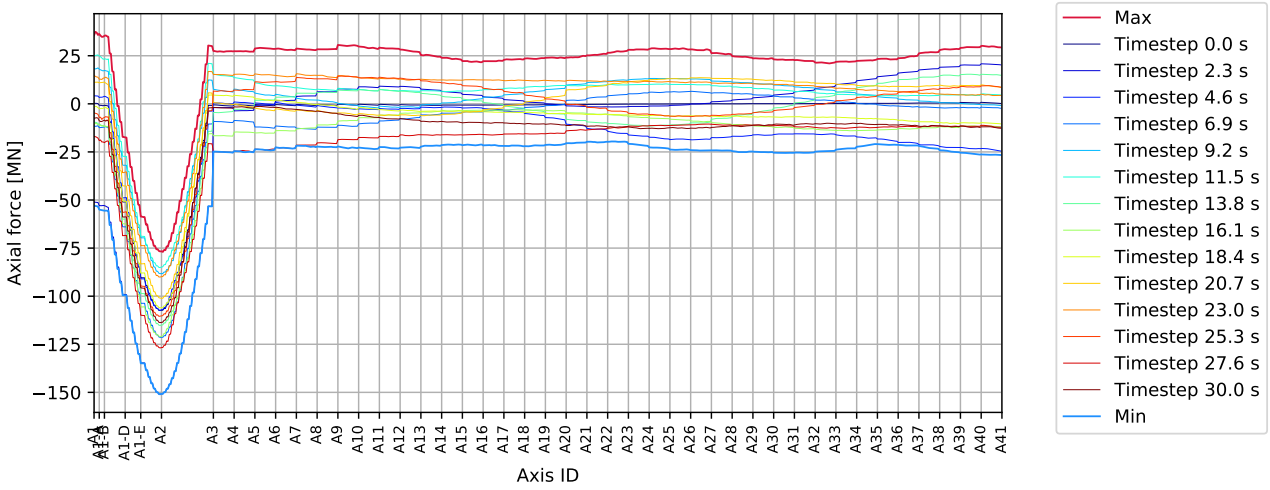

Figure 3.834: P A3 80deg - bridgegirder : Axial force [MN]

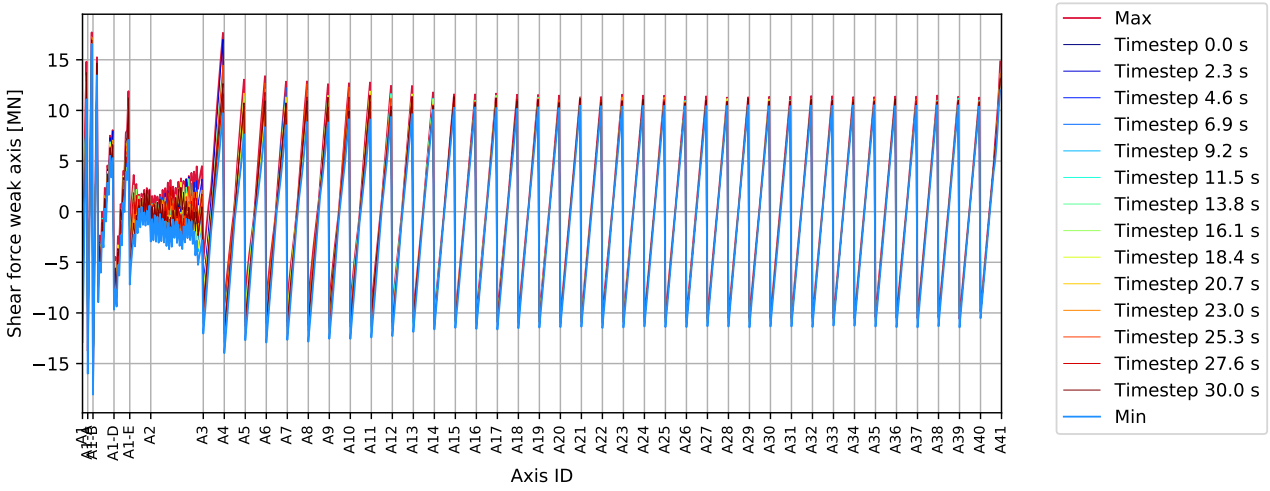

Figure 3.835: P A3 80deg - bridgegirder : Shear force weak axis [MN]

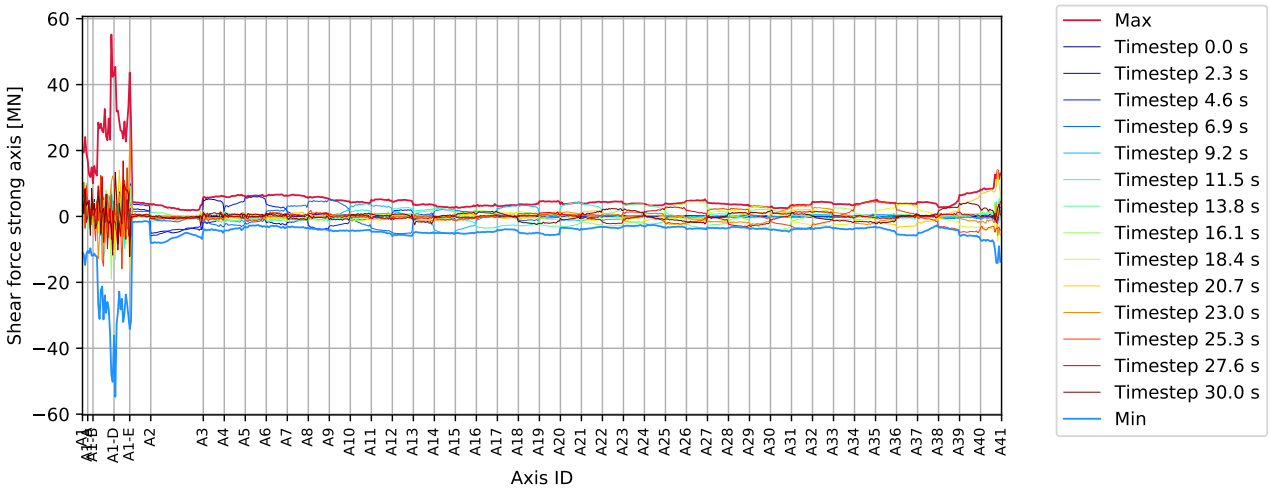

Figure 3.836: P A3 80deg - bridgegirder : Shear force strong axis [MN]

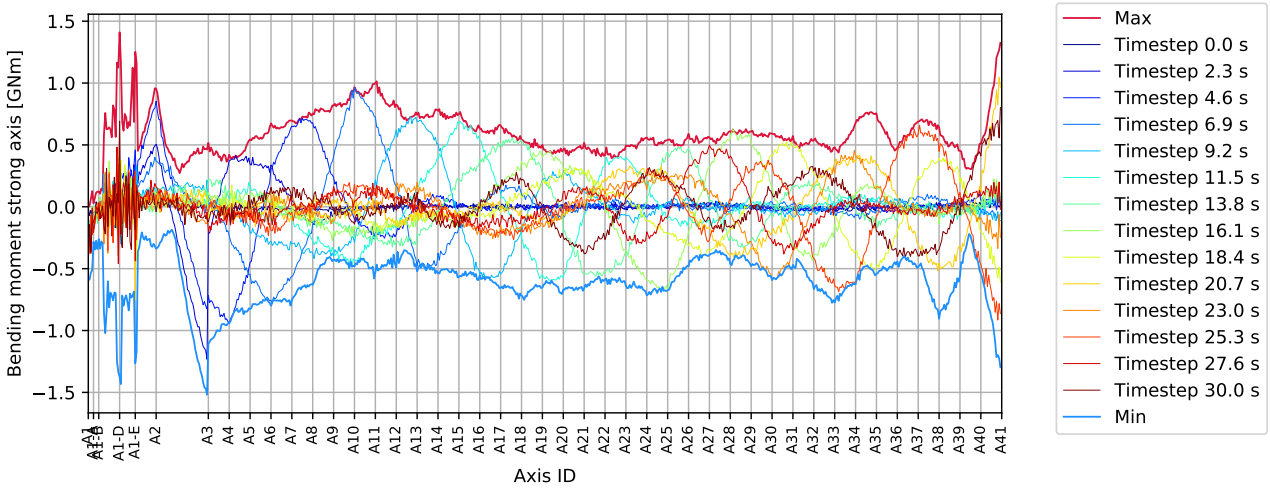

Figure 3.837: P A3 80deg - bridgegirder : Bending moment strong axis [GNm]

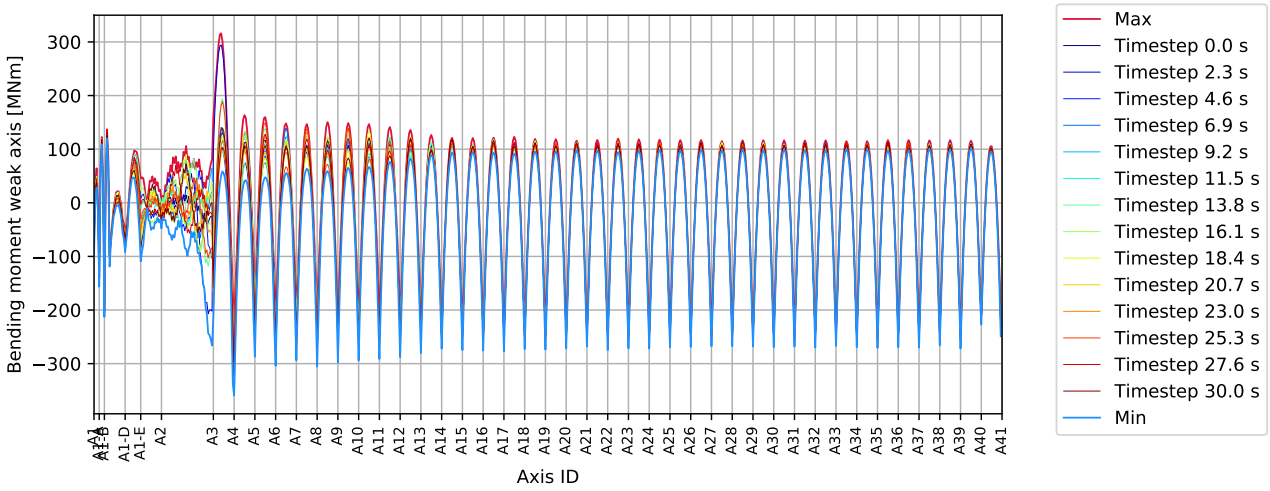

Figure 3.838: P A3 80deg - bridgegirder : Bending moment weak axis [MNm]

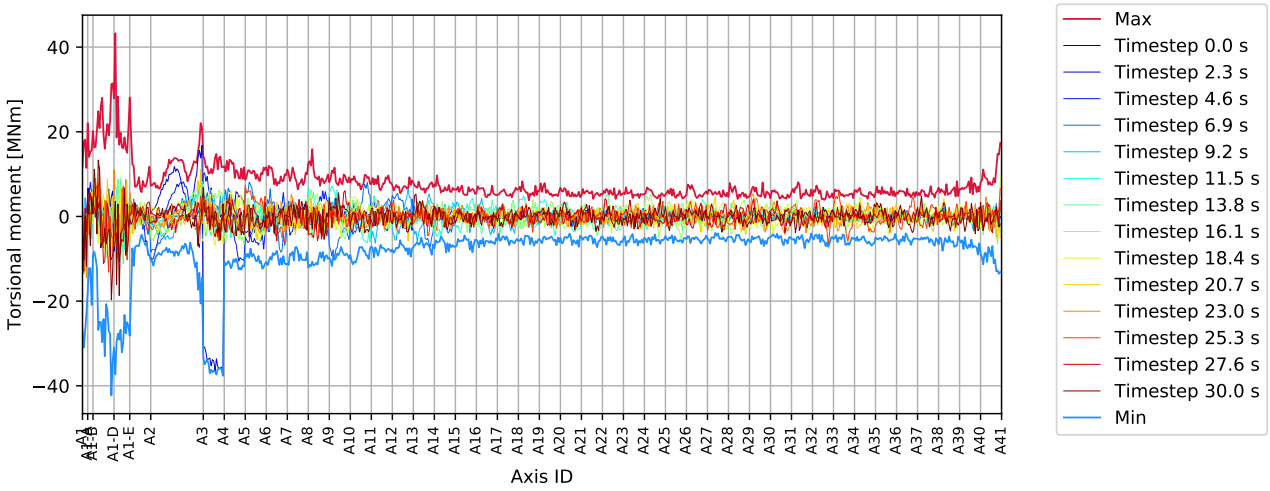

Figure 3.839: P A3 80deg - bridgegirder : Torsional moment [MNm]

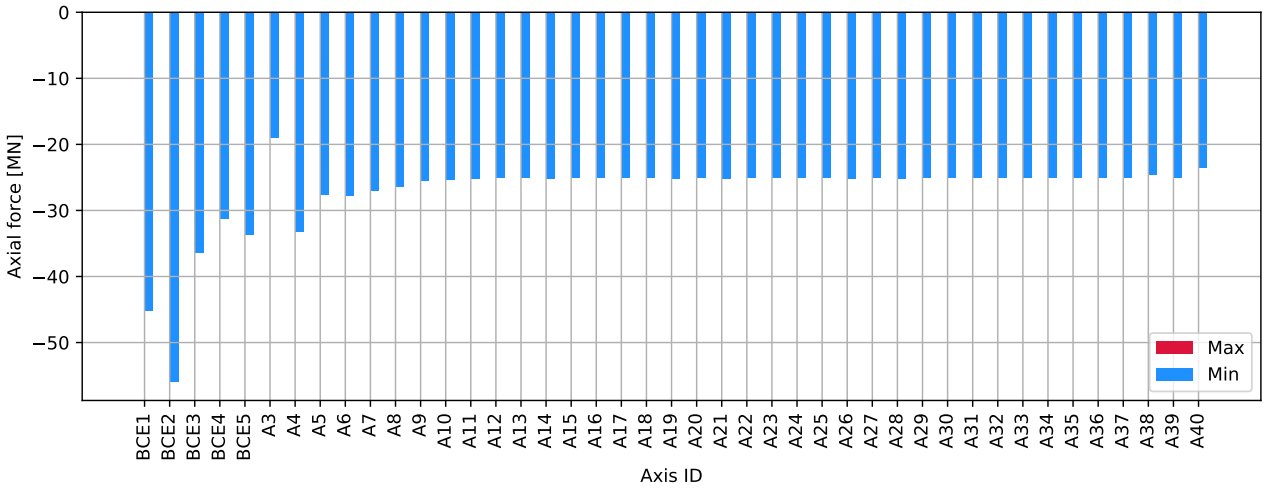

Figure 3.840: P A3 80deg - columns bottom : Axial force [MN]

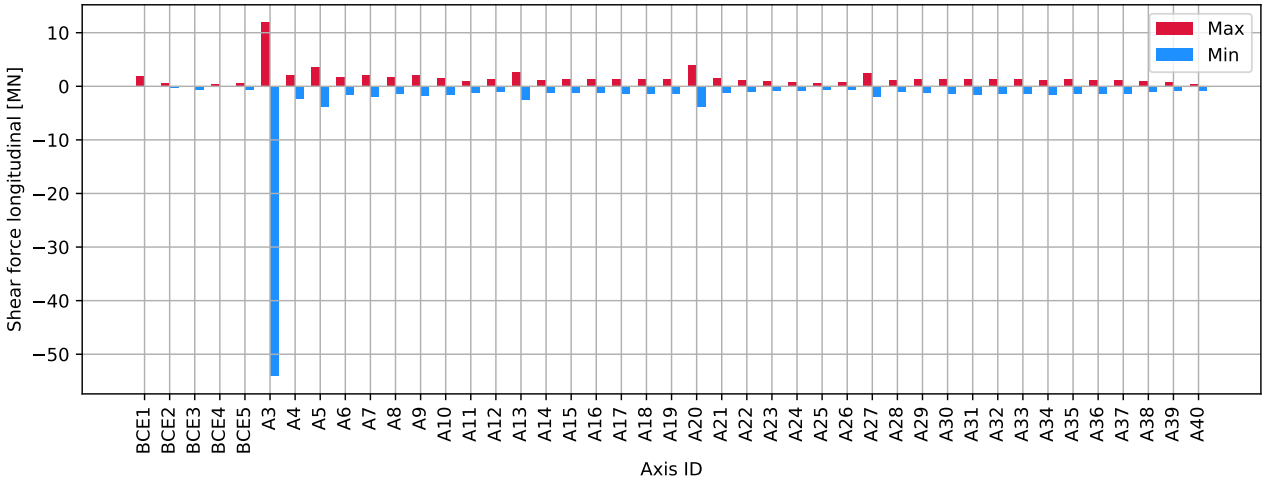

Figure 3.841: P A3 80deg - columns bottom : Shear force longitudinal [MN]

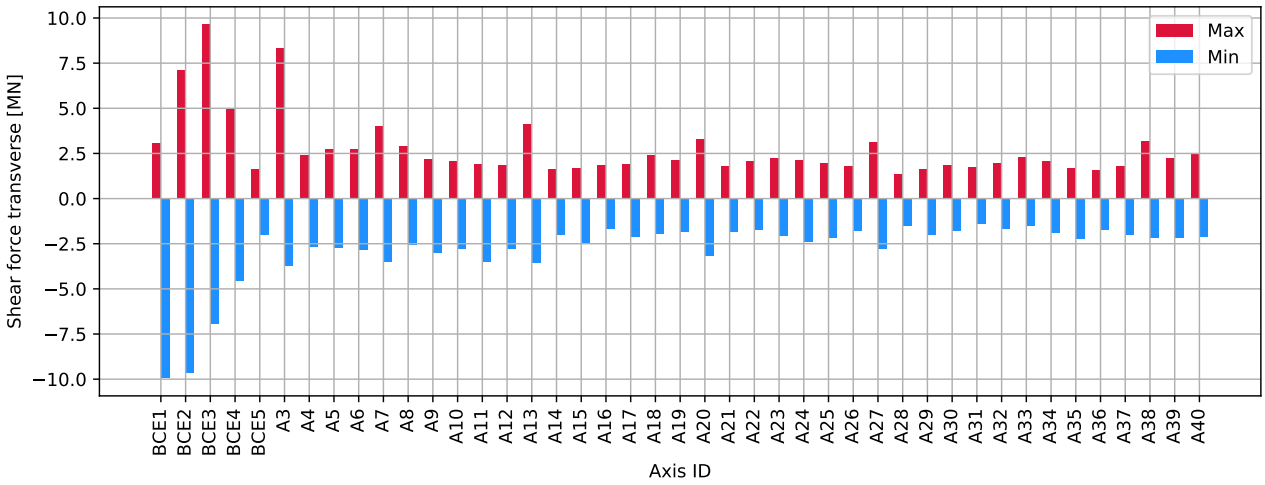

Figure 3.842: P A3 80deg - columns bottom : Shear force transverse [MN]

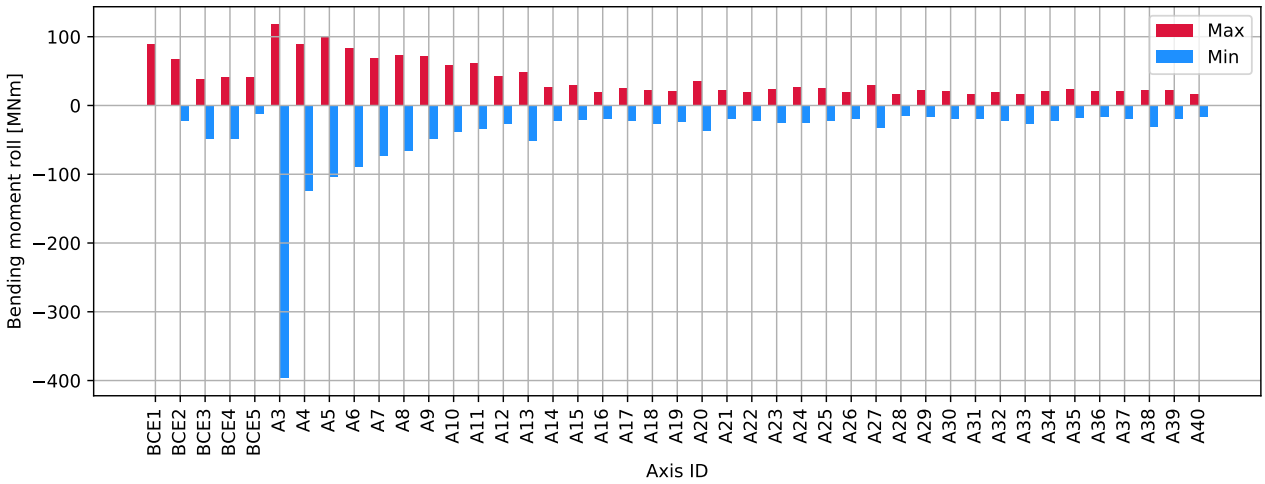

Figure 3.843: P A3 80deg - columns bottom : Bending moment roll [MNm]

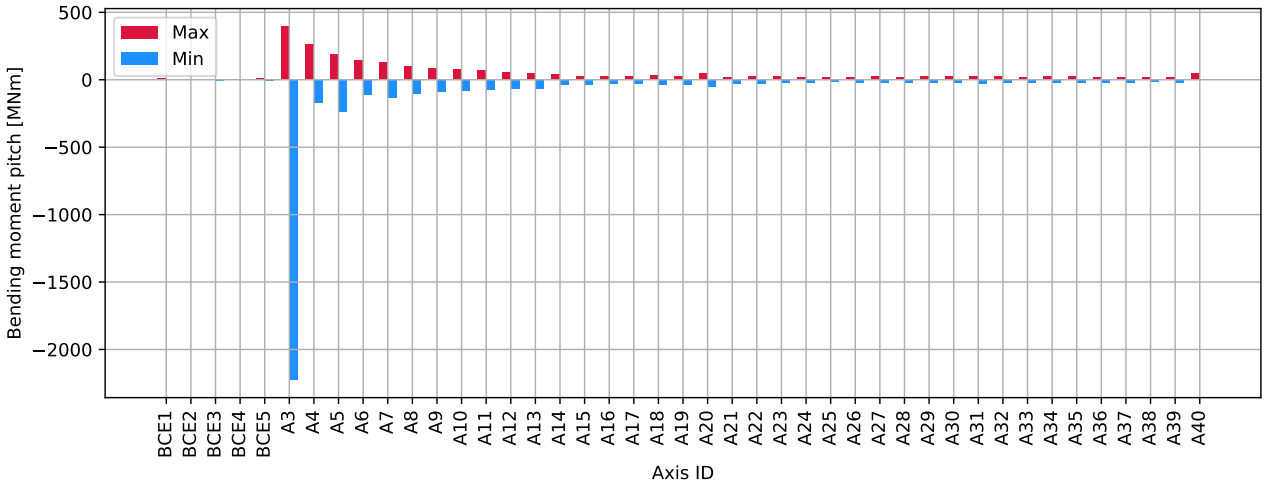

Figure 3.844: P A3 80deg - columns bottom : Bending moment pitch [MNm]

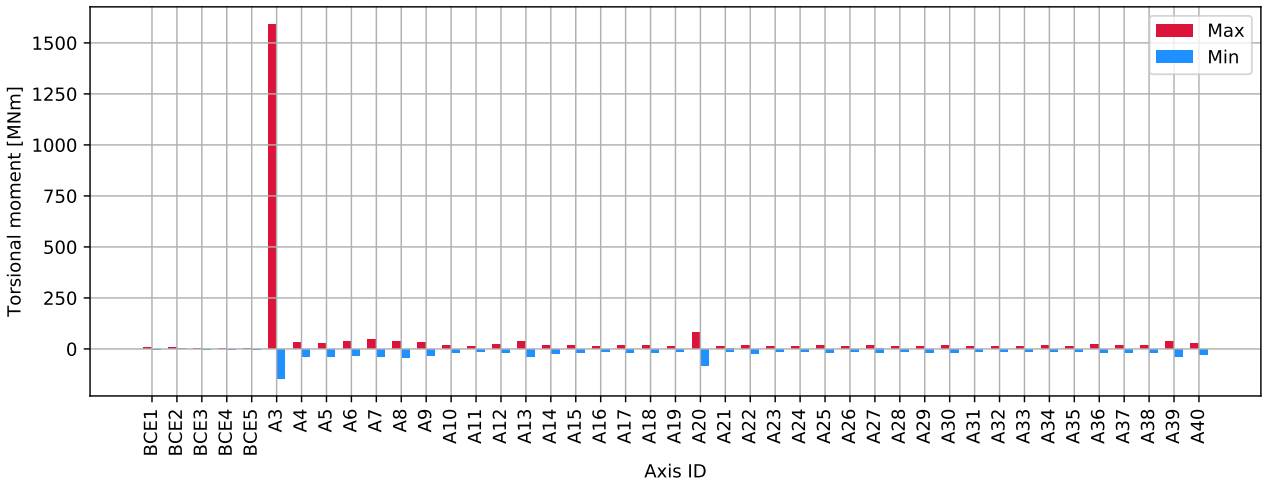

Figure 3.845: P A3 80deg - columns bottom : Torsional moment [MNm]

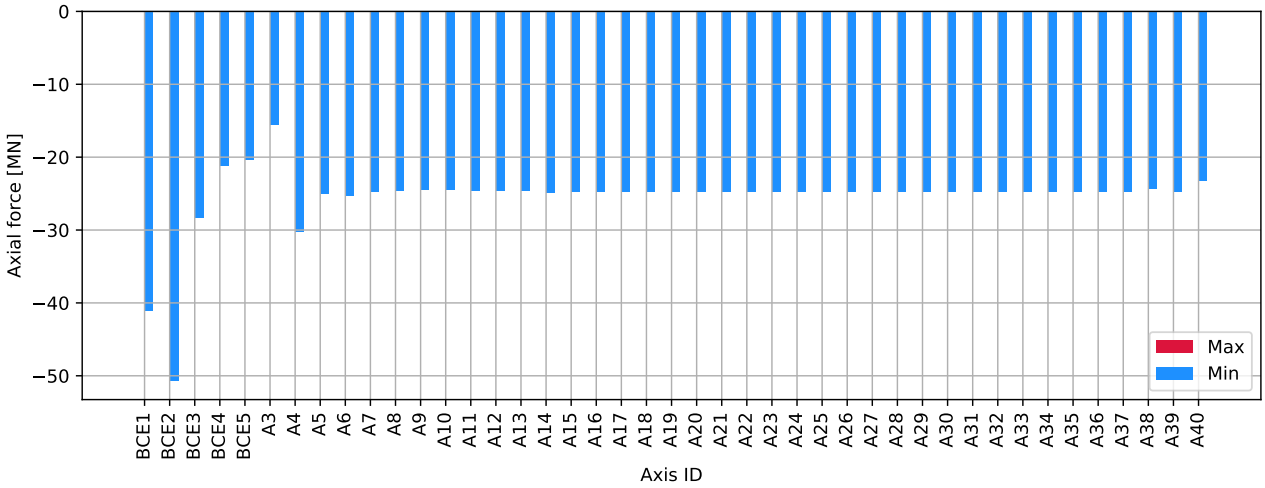

Figure 3.846: P A3 80deg - columns top : Axial force [MN]

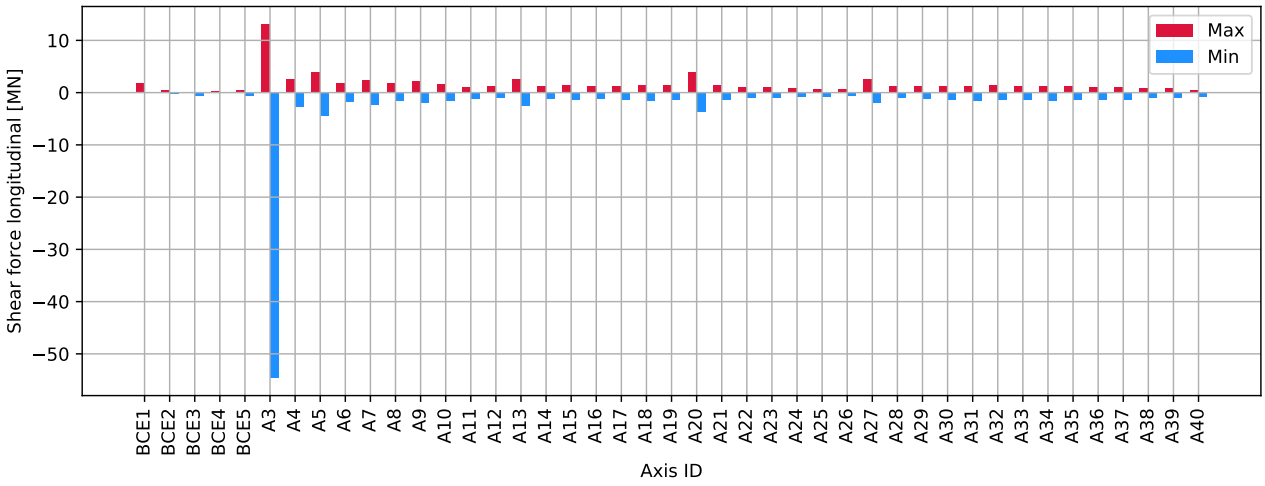

Figure 3.847: P A3 80deg - columns top : Shear force longitudinal [MN]

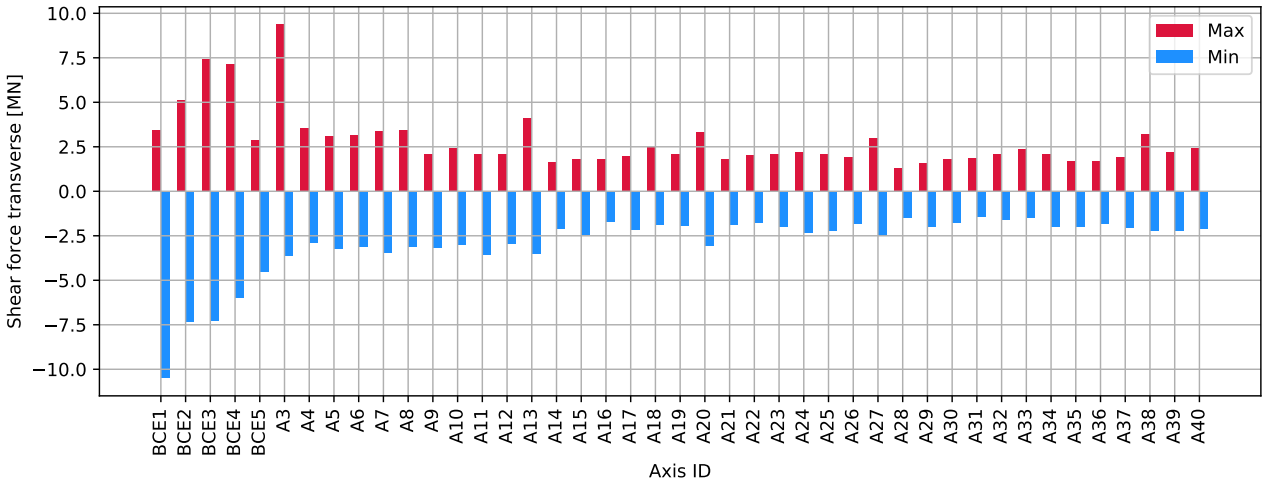

Figure 3.848: P A3 80deg - columns top : Shear force transverse [MN]

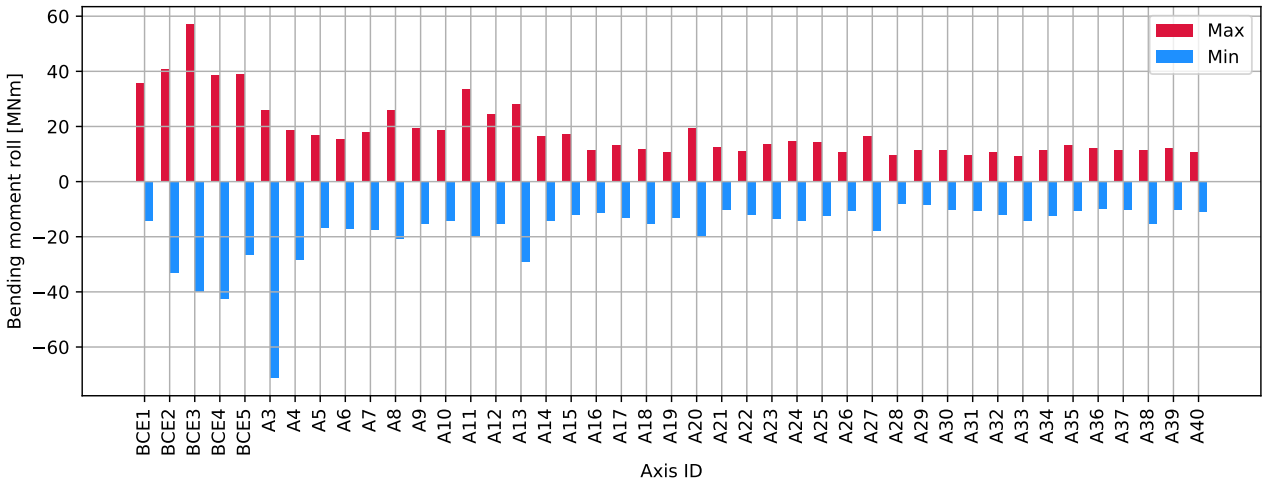

Figure 3.849: P A3 80deg - columns top : Bending moment roll [MNm]

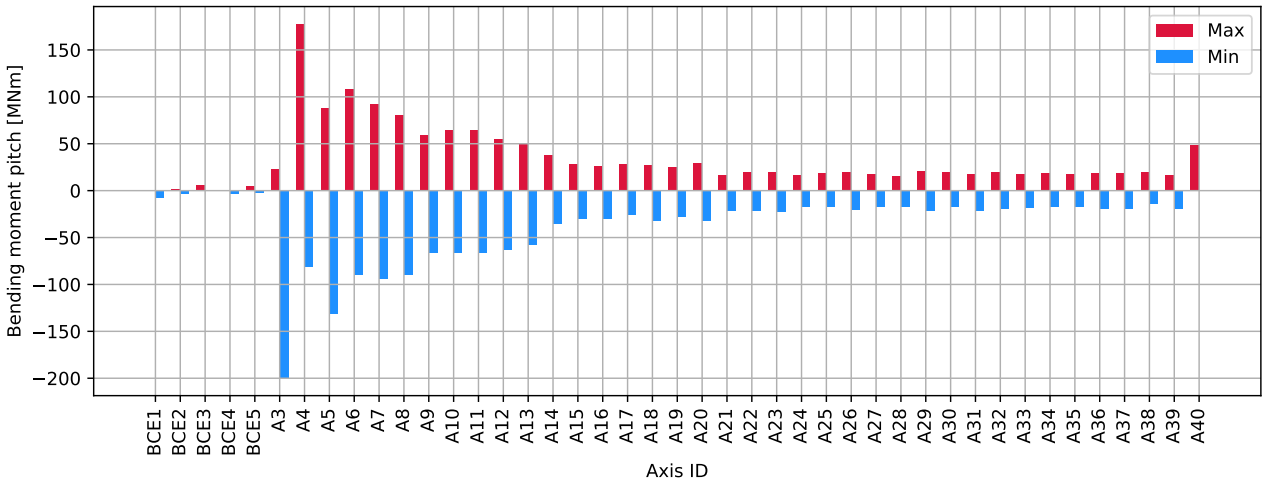

Figure 3.850: P A3 80deg - columns top : Bending moment pitch [MNm]

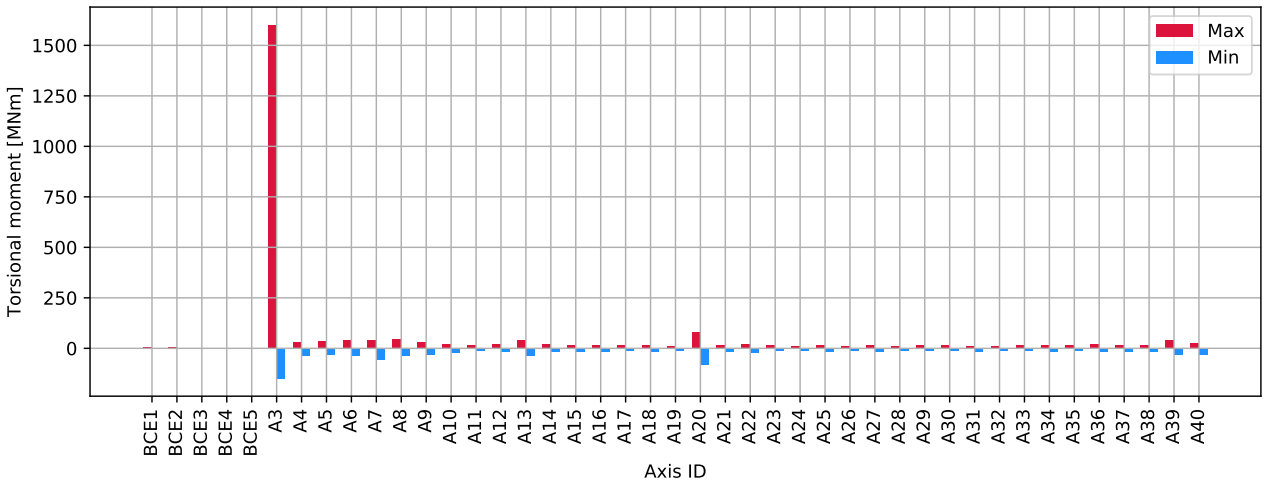

Figure 3.851: P A3 80deg - columns top : Torsional moment [MNm]

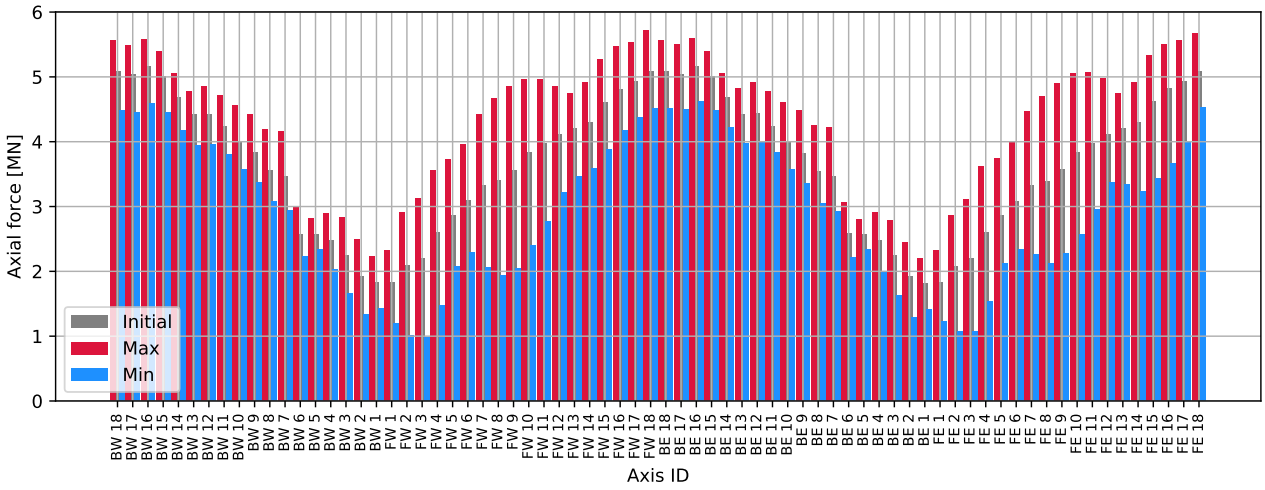

Figure 3.852: P A3 80deg - cables : Axial force [MN]

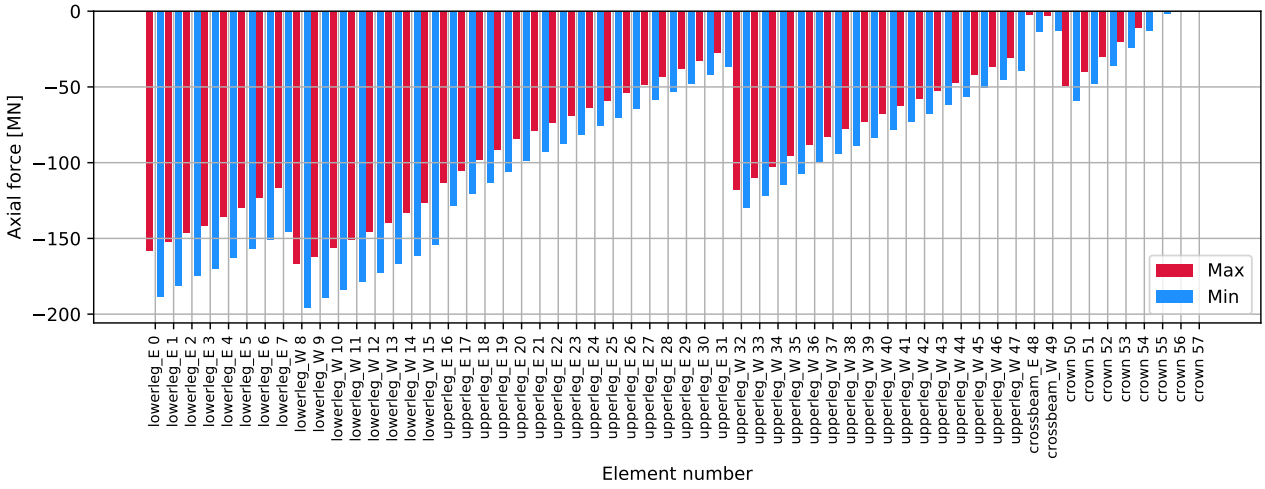

Figure 3.853: P A3 80deg - tower: Axial force [MN]

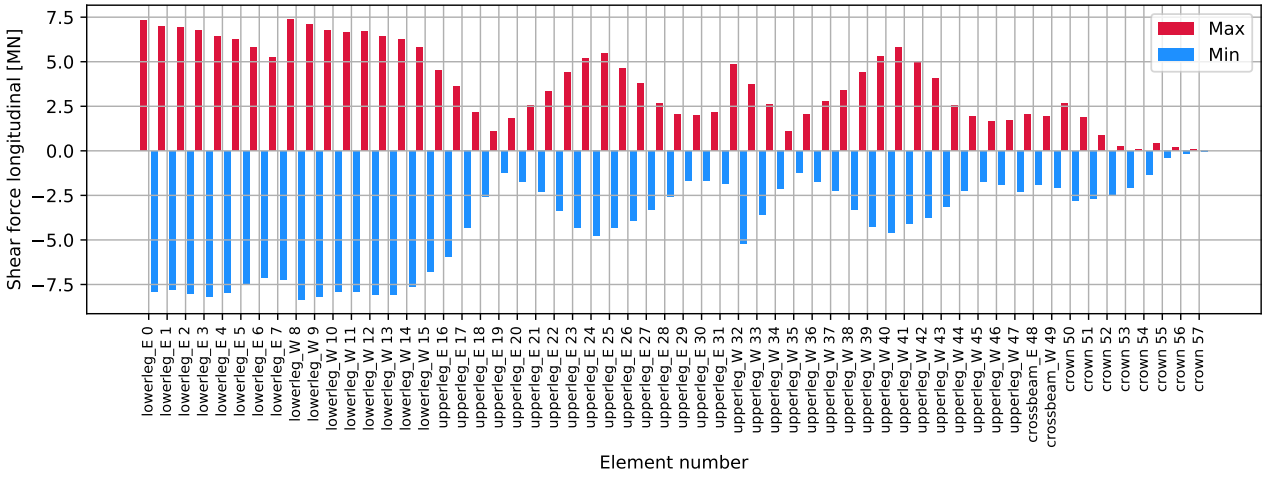

Figure 3.854: P A3 80deg - tower: Shear force longitudinal [MN]

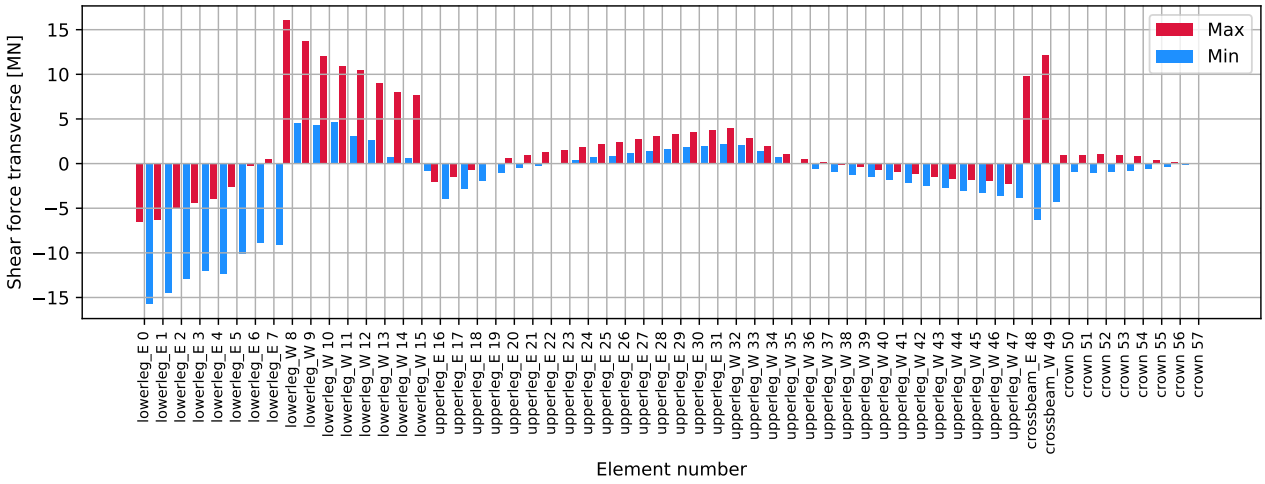

Figure 3.855: P A3 80deg - tower: Shear force transverse [MN]

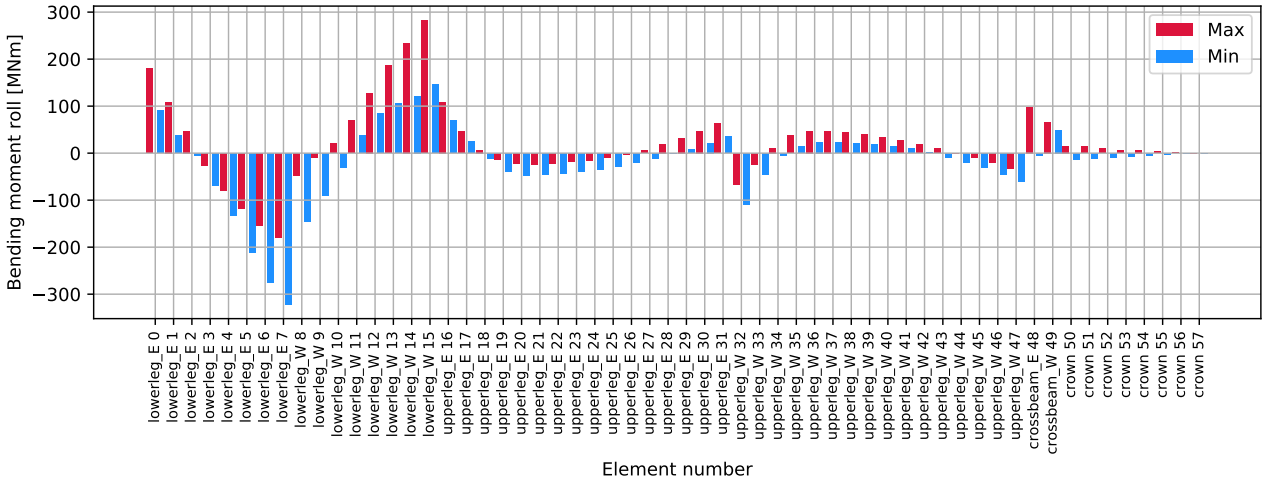

Figure 3.856: P A3 80deg - tower: Bending moment roll [MNm]

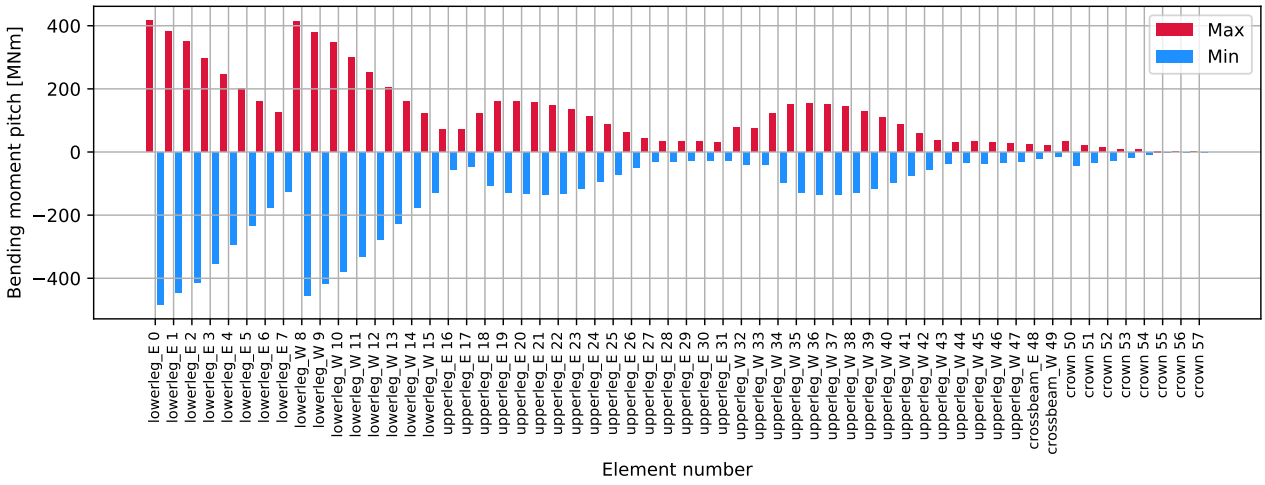

Figure 3.857: P A3 80deg - tower: Bending moment pitch [MNm]

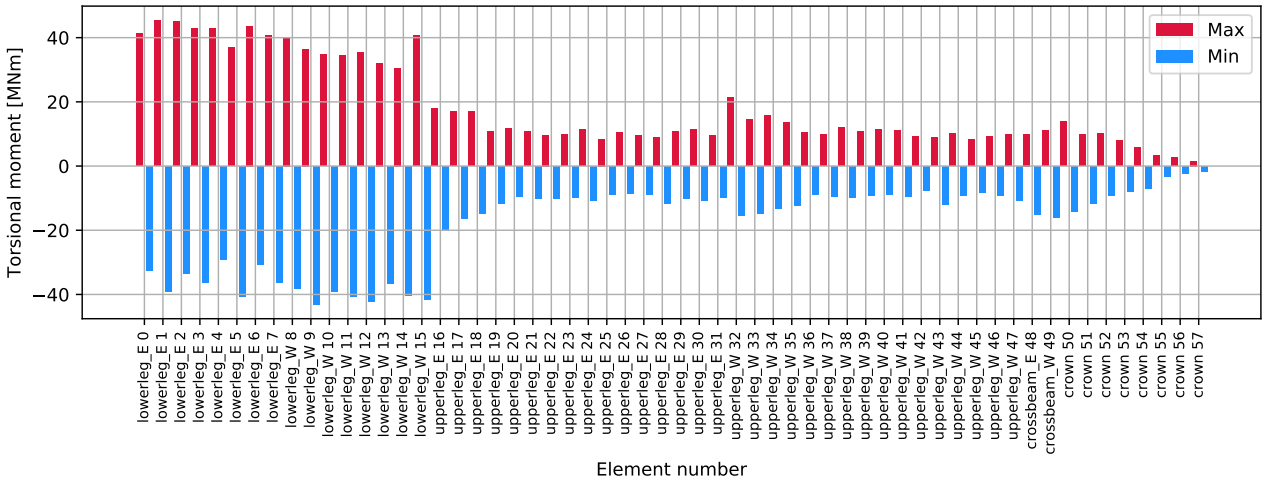

Figure 3.858: P A3 80deg - tower: Torsional moment [MNm]

3.19.3 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

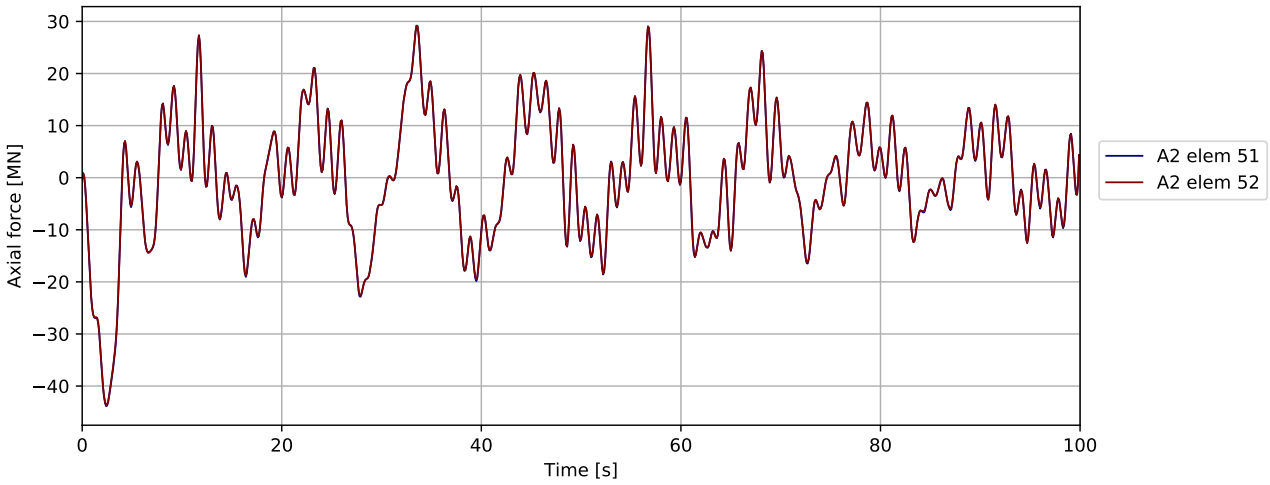

Figure 3.859: P A3 80deg - bridgegirder @ pylon: Axial force [MN]

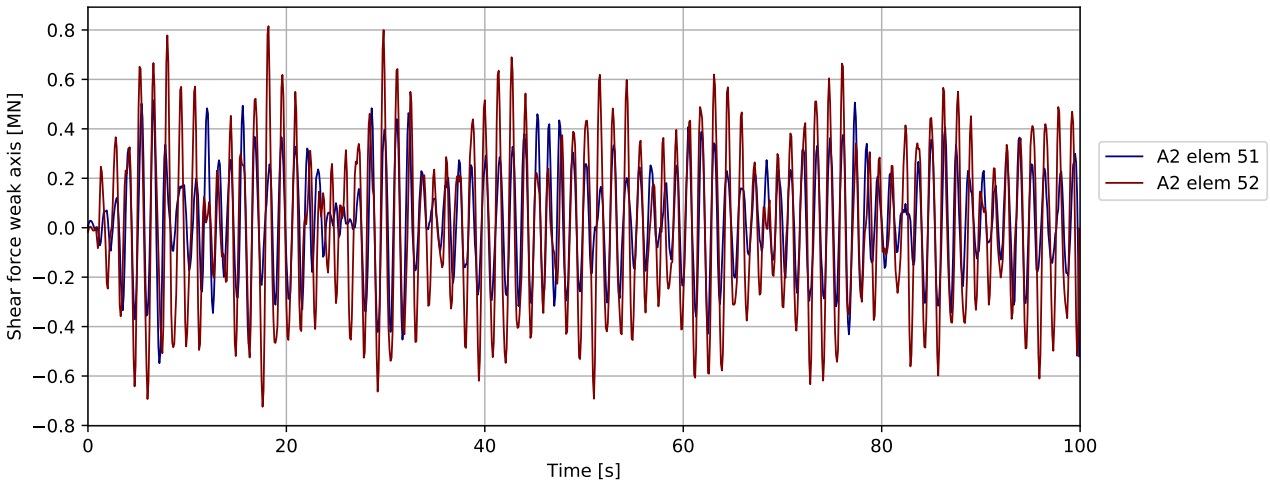

Figure 3.860: P A3 80deg - bridgegirder @ pylon: Shear force weak axis [MN]

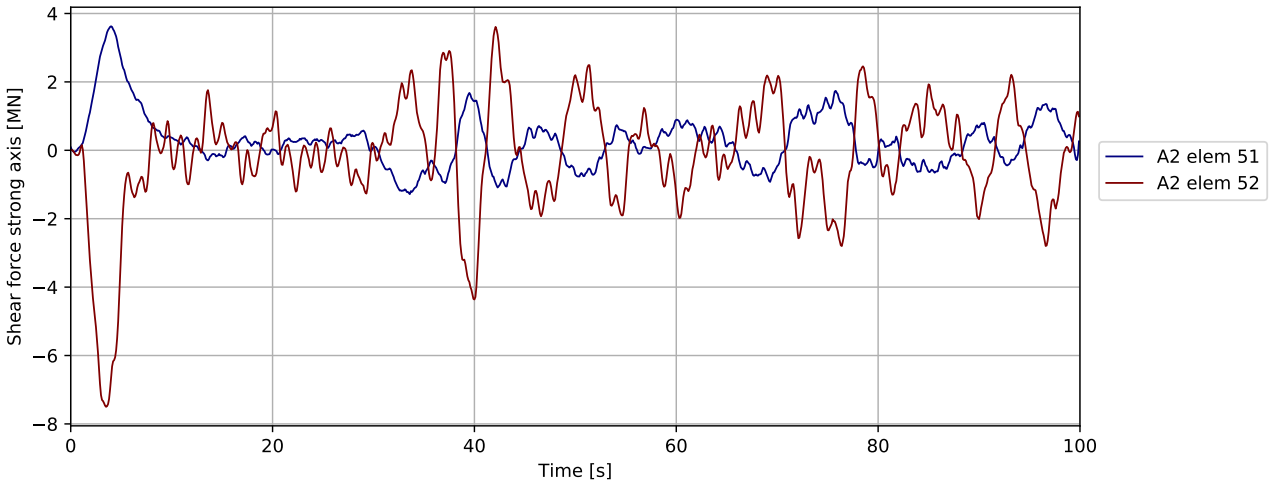

Figure 3.861: P A3 80deg - bridgegirder @ pylon: Shear force strong axis [MN]

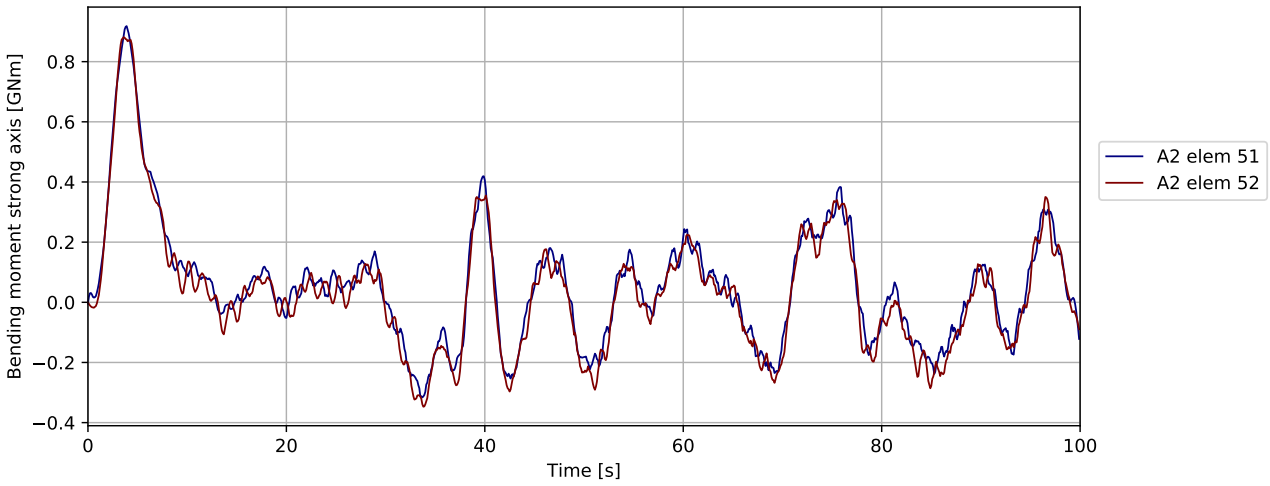

Figure 3.862: P A3 80deg - bridgegirder @ pylon: Bending moment strong axis [GNm]

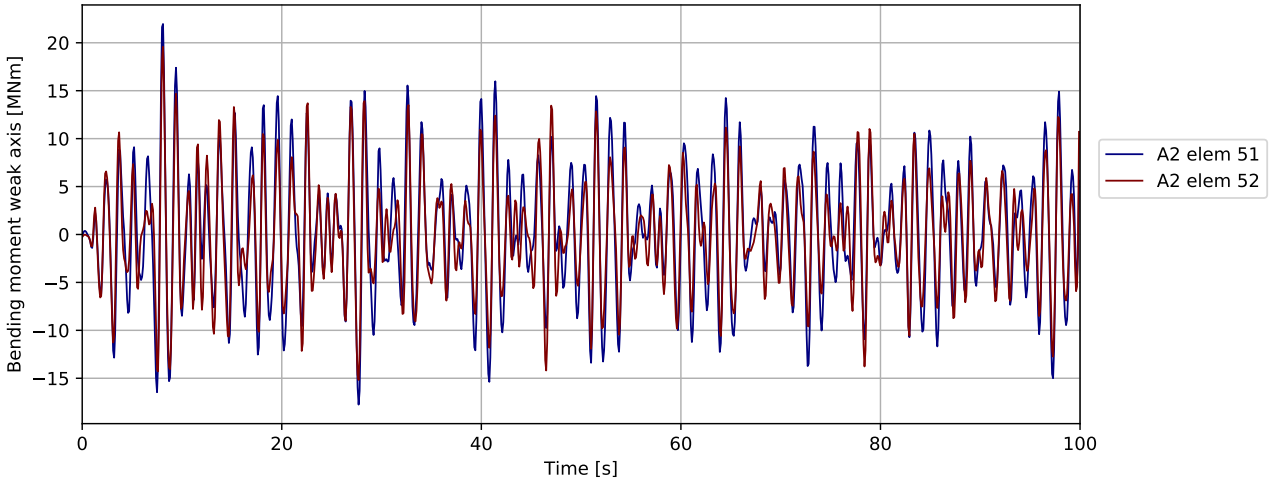

Figure 3.863: P A3 80deg - bridgegirder @ pylon: Bending moment weak axis [MNm]

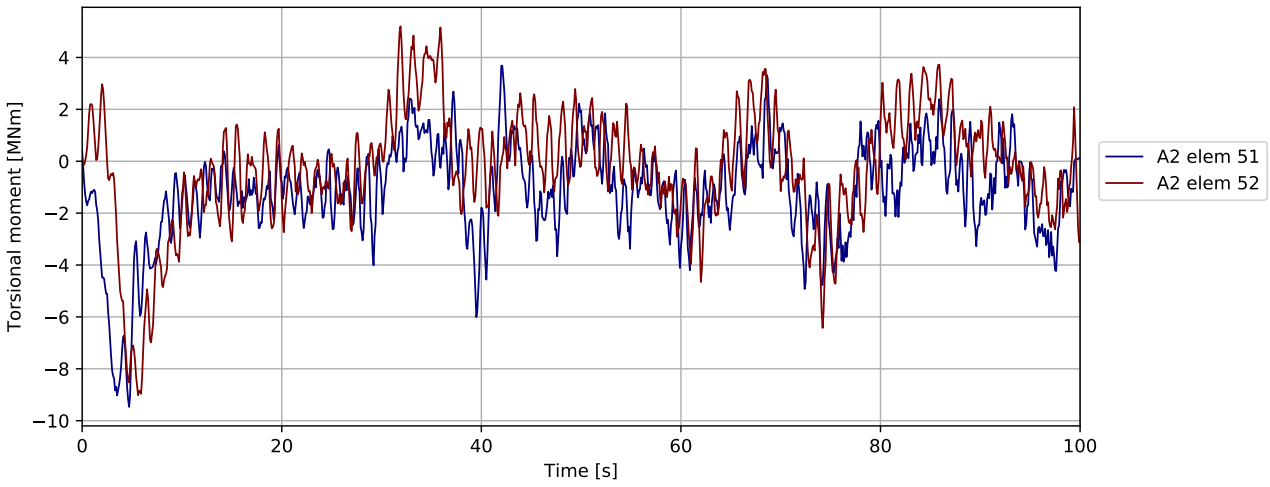

Figure 3.864: P A3 80deg - bridgegirder @ pylon: Torsional moment [MNm]

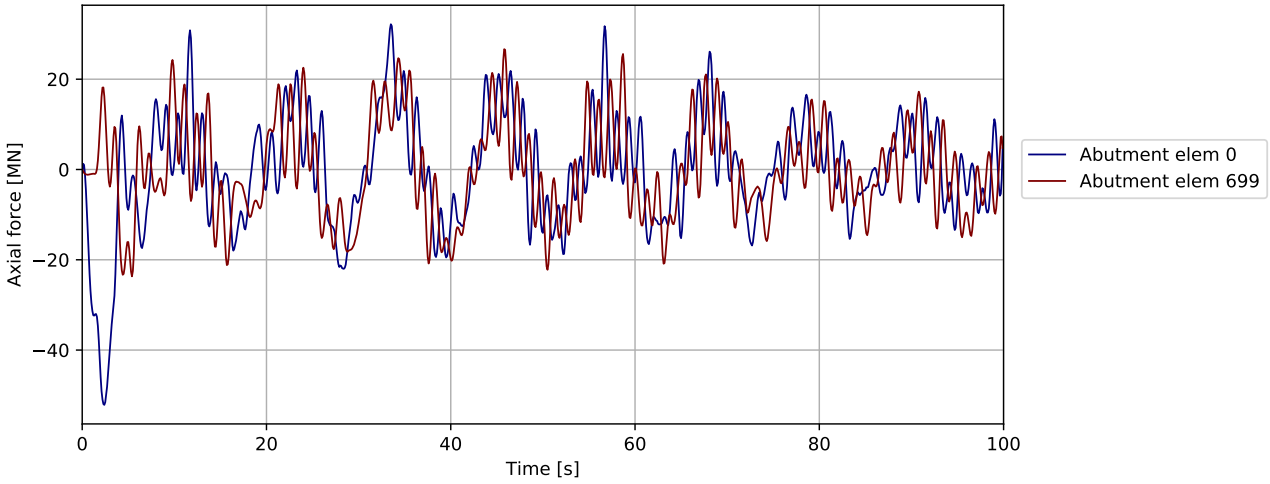

Figure 3.865: P A3 80deg - bridgegirder @abutments: Axial force [MN]

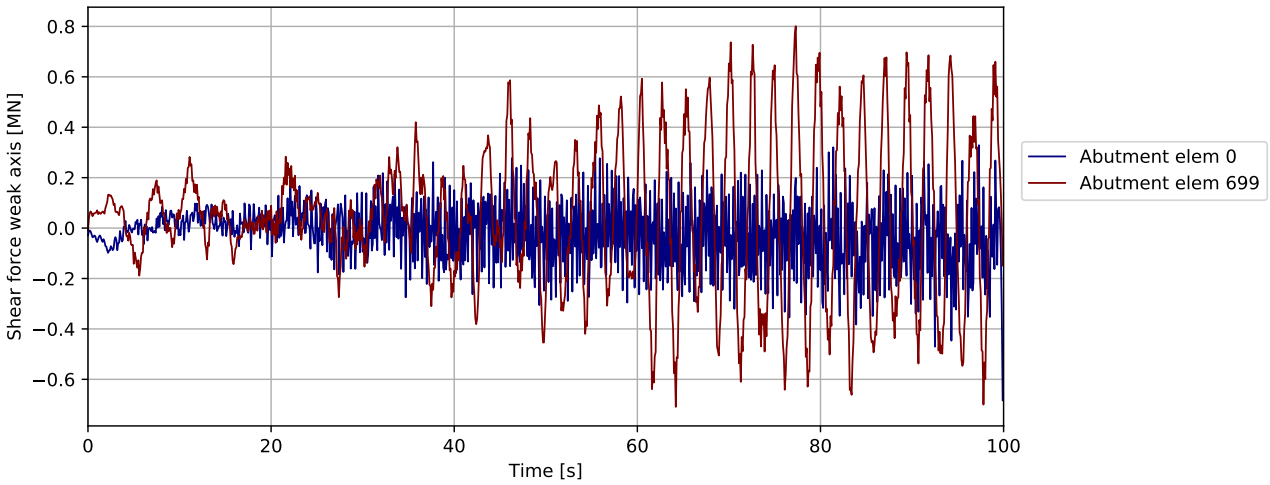

Figure 3.866: P A3 80deg - bridgegirder @abutments: Shear force weak axis [MN]

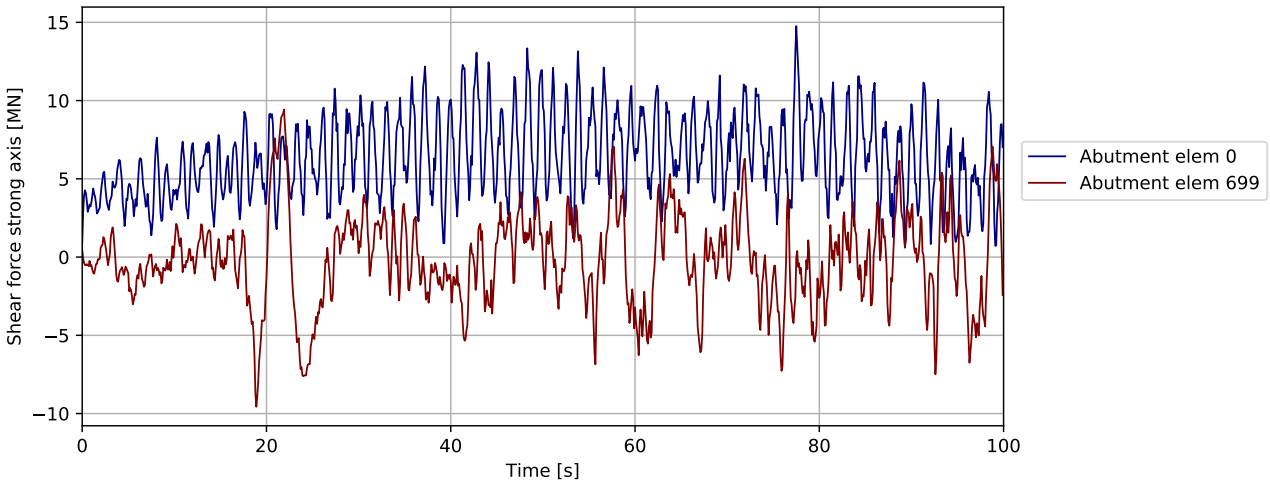

Figure 3.867: P A3 80deg - bridgegirder @abutments: Shear force strong axis [MN]

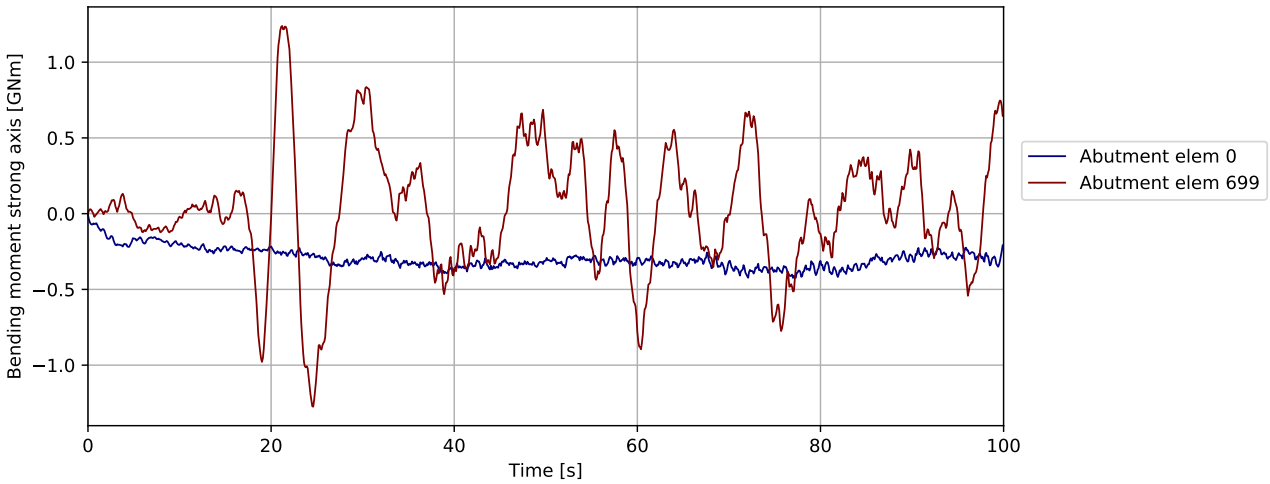

Figure 3.868: P A3 80deg - bridgegirder @abutments: Bending moment strong axis [GNm]

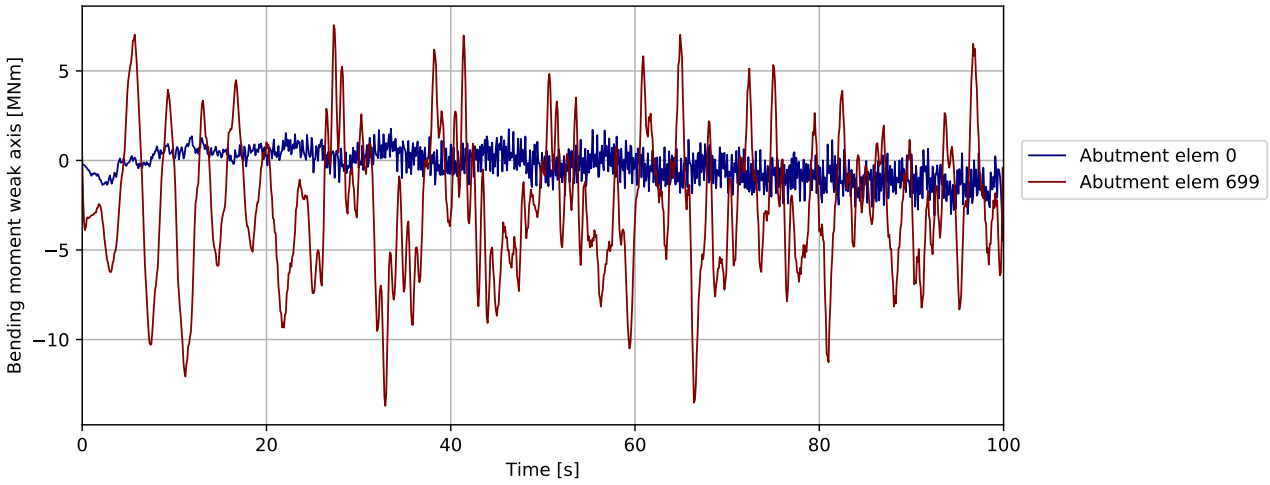

Figure 3.869: P A3 80deg - bridgegirder @abutments: Bending moment weak axis [MNm]

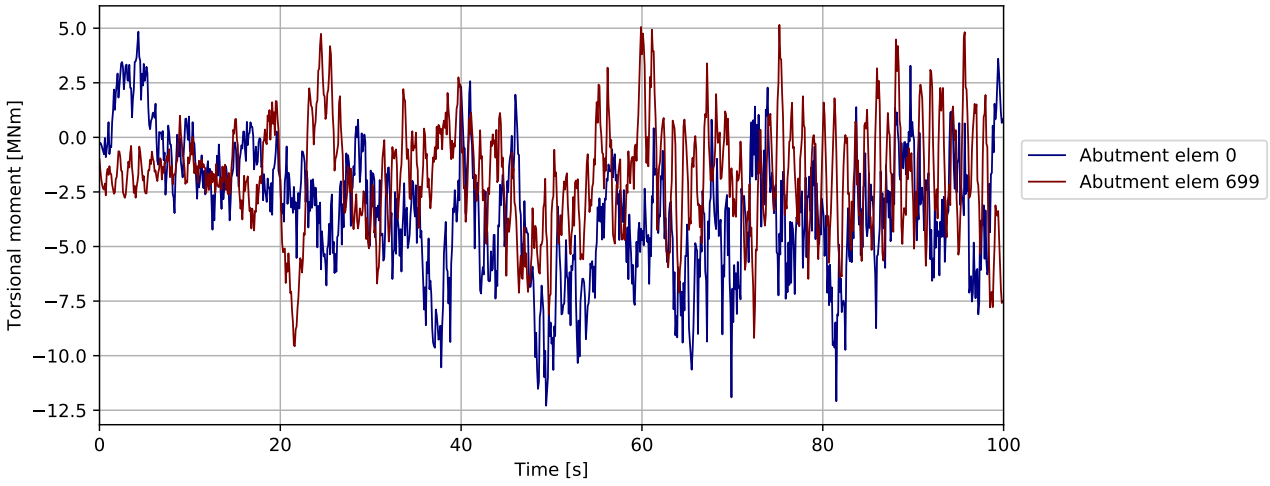

Figure 3.870: P A3 80deg - bridgegirder @abutments: Torsional moment [MNm]

Note : Compressive spring force is negative

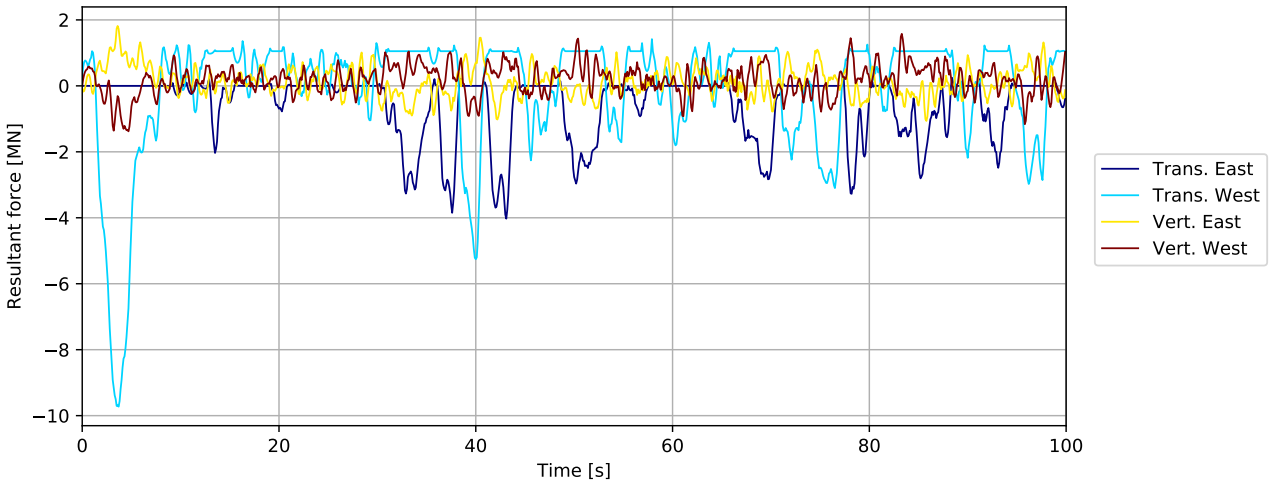

Figure 3.871: P A3 80deg - bridgegirder supports in tower: Resultant force [MN]

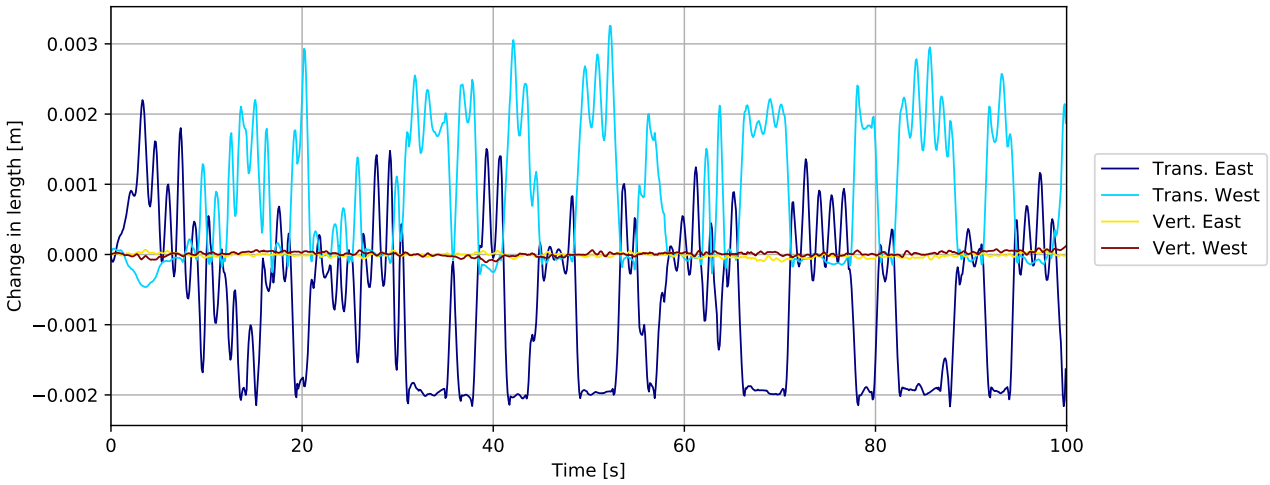

Figure 3.872: P A3 80deg - bridgegirder supports in tower: Change in length [m]

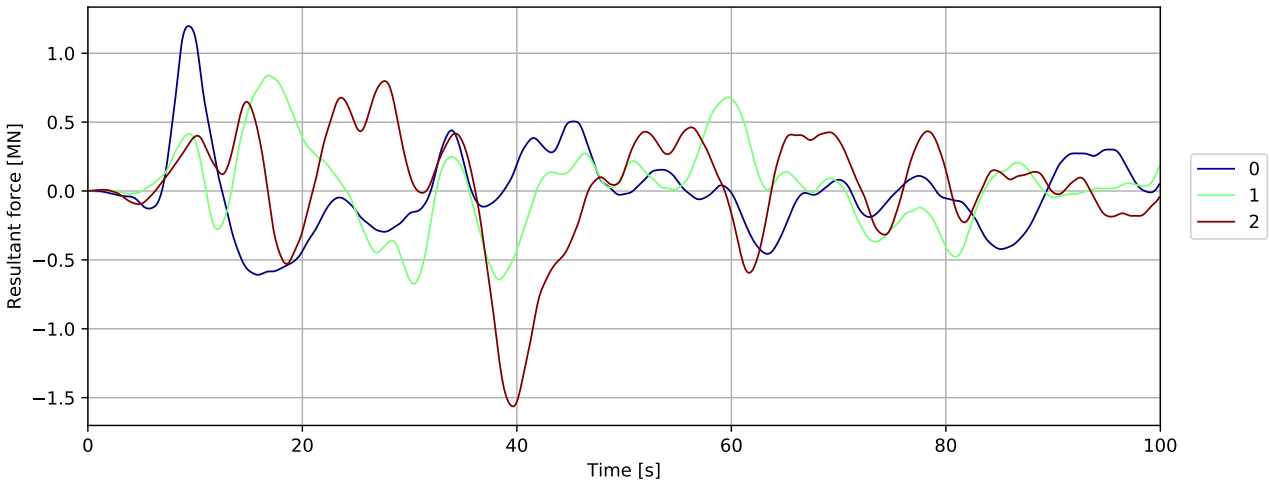

Figure 3.873: Mooring force

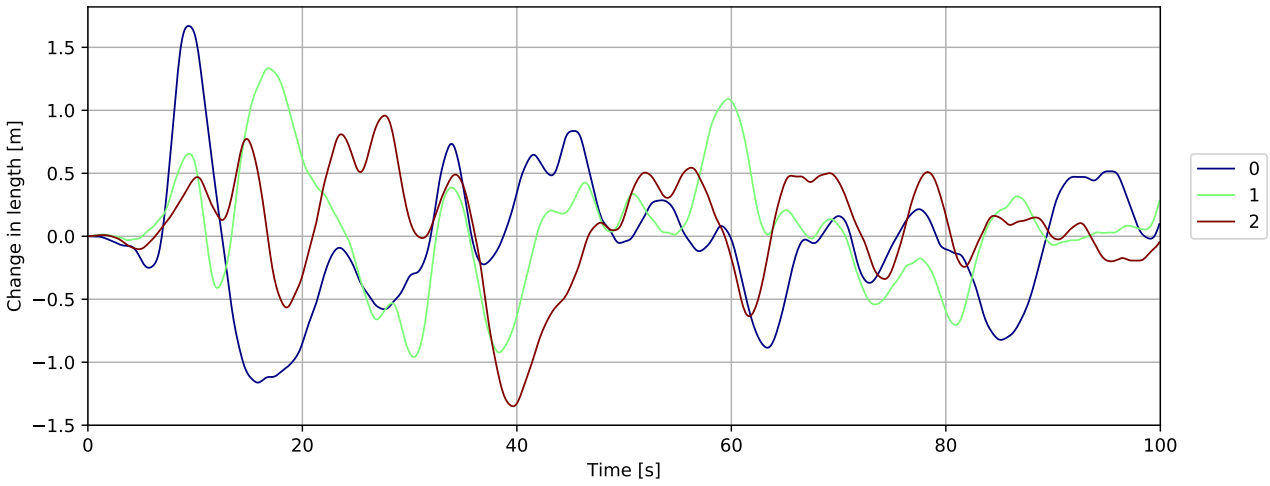

Figure 3.874: Mooring displacement

3.20 PontoonA4 80deg

3.20.1 Overall response

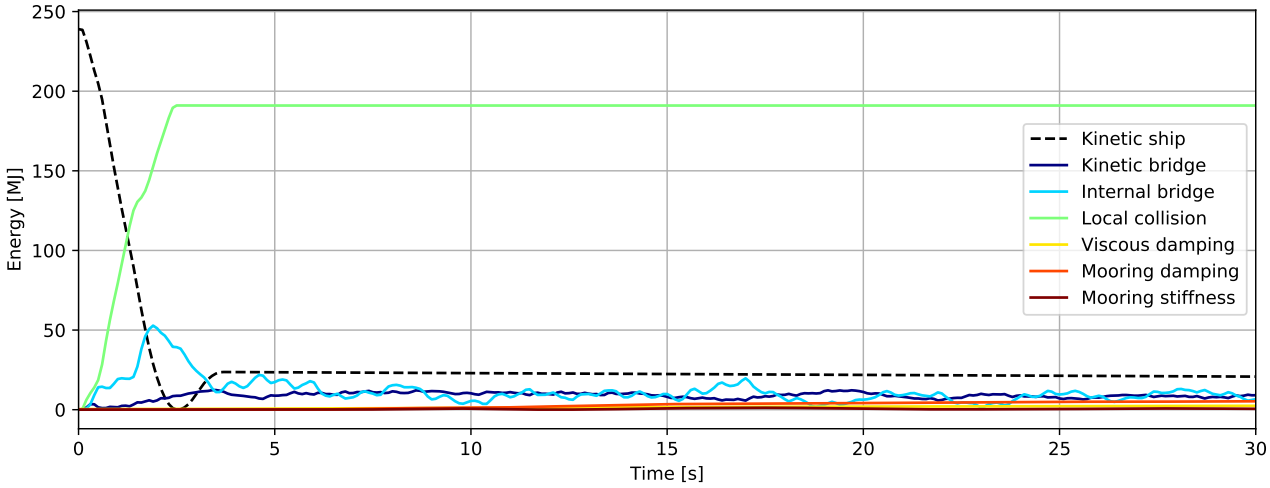

Figure 3.875: Energy [MJ] - initial phase

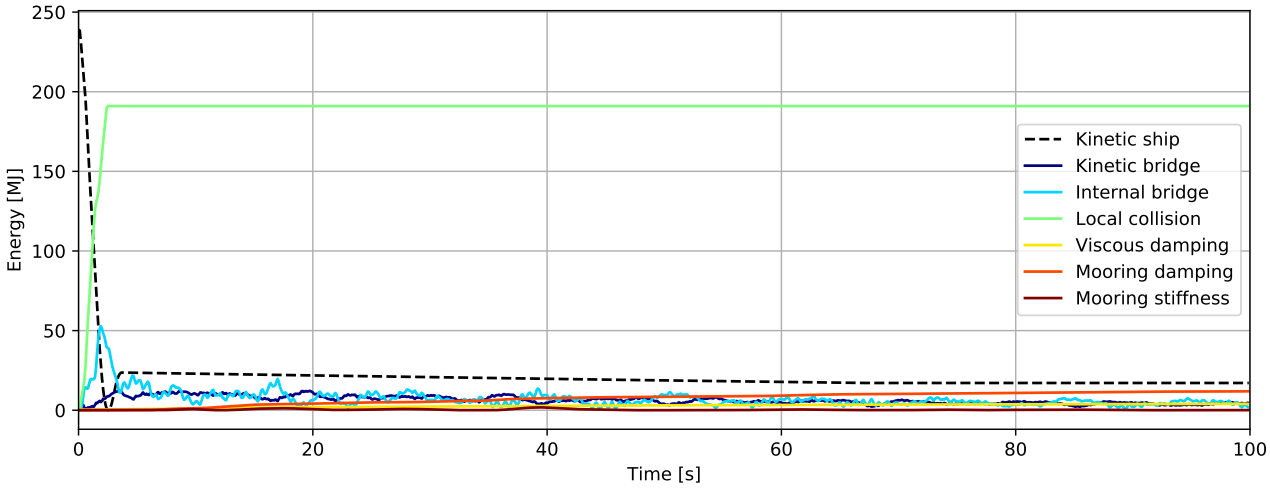

Figure 3.876: Energy [MJ]

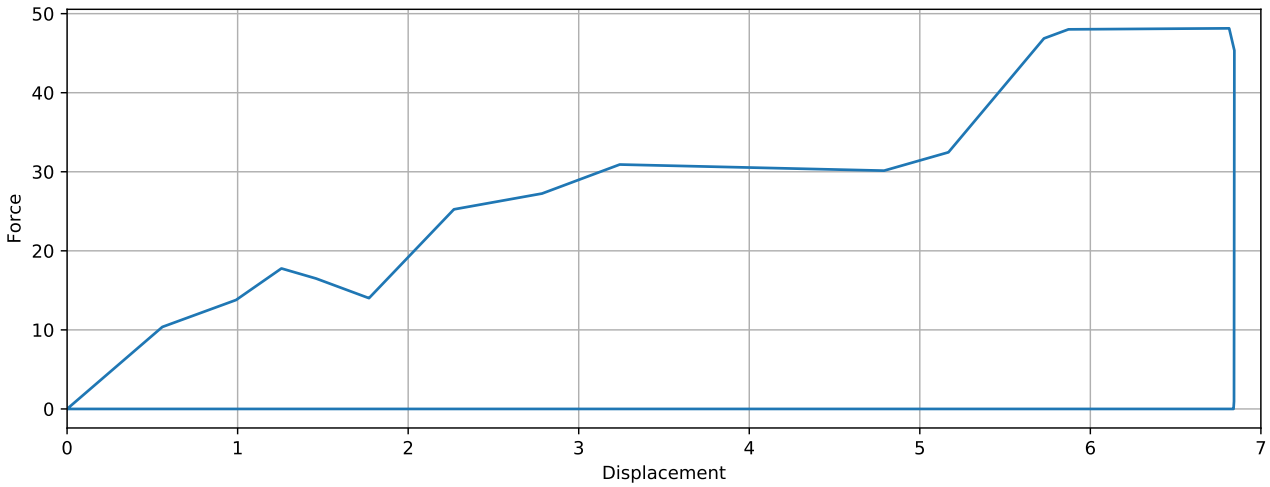

Figure 3.877: Simulated local collision force-displacement

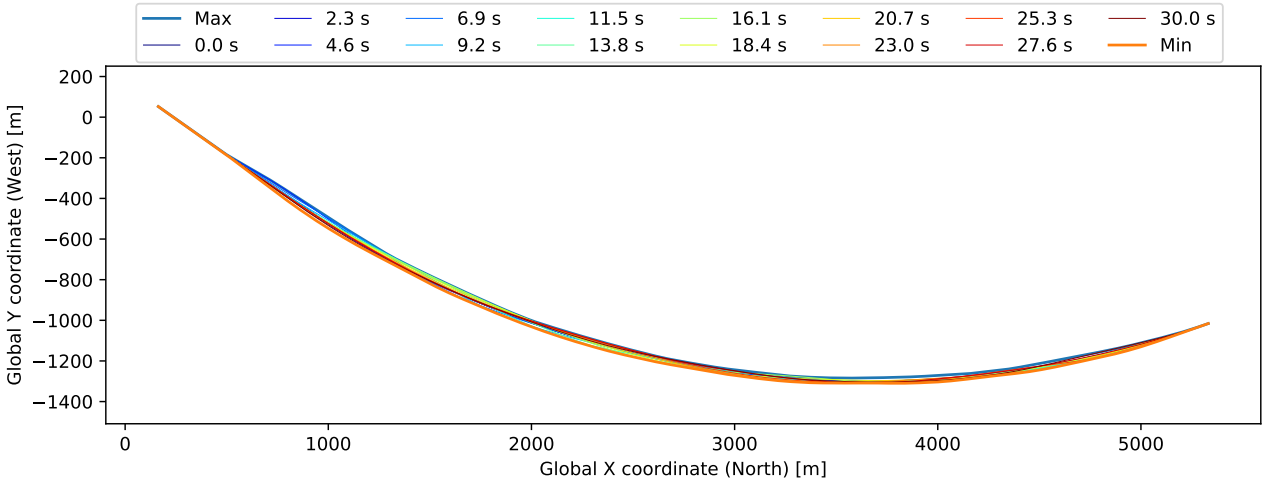

Figure 3.878: Bridgegirder deflection (10x displacment scaling)

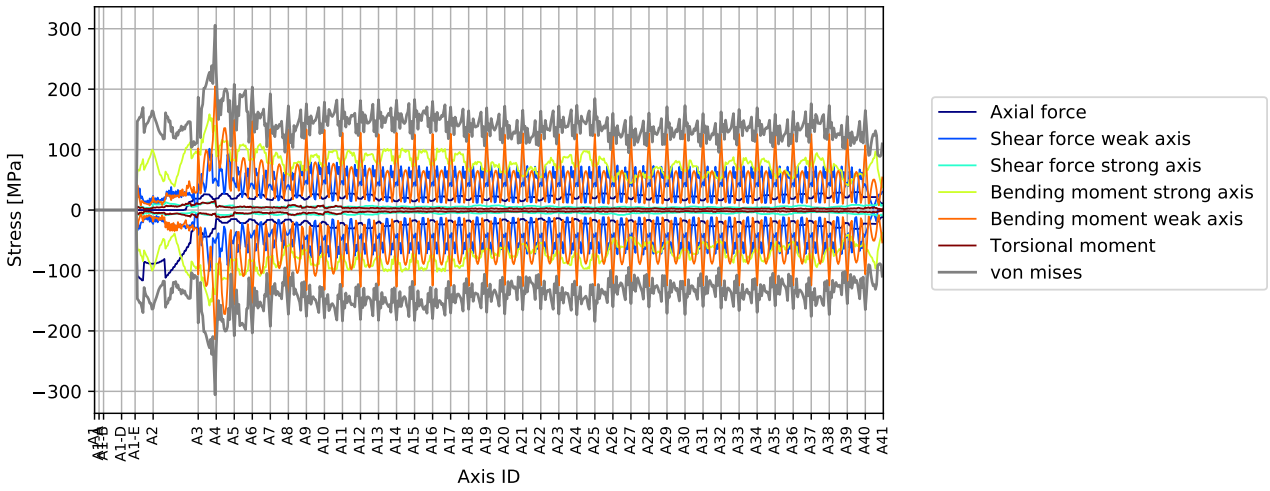

Figure 3.879: Stress envelope from all force components

3.20.2 Envelope plots

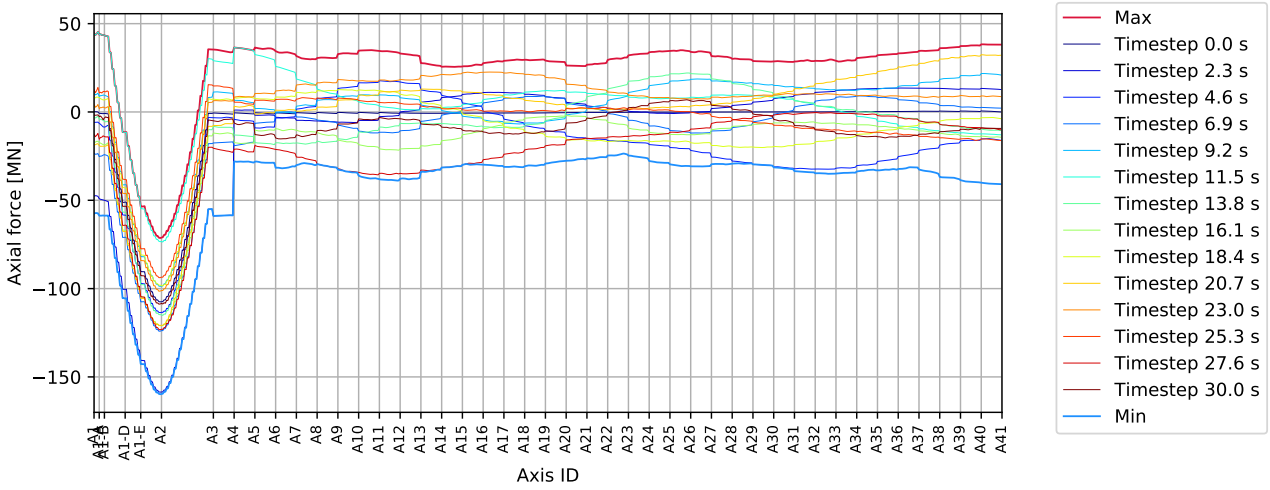

Figure 3.880: P A4 80deg - bridgegirder : Axial force [MN]

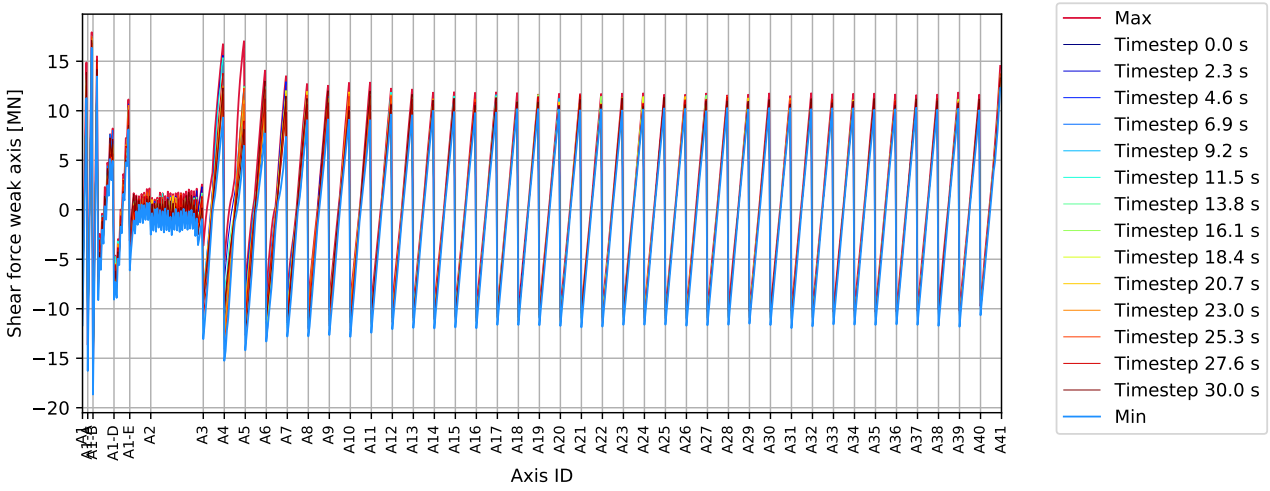

Figure 3.881: P A4 80deg - bridgegirder : Shear force weak axis [MN]

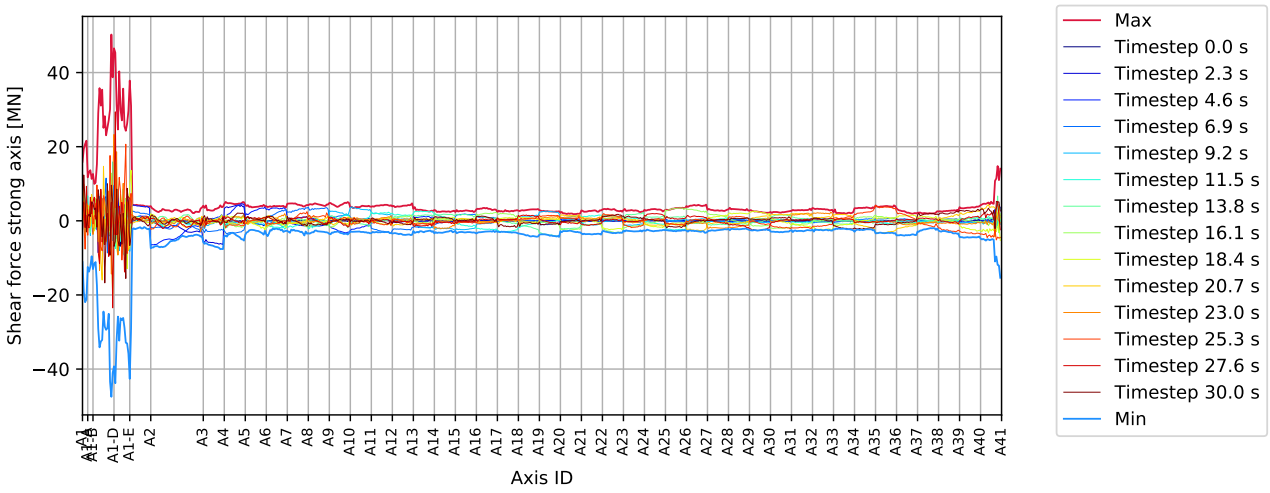

Figure 3.882: P A4 80deg - bridgegirder : Shear force strong axis [MN]

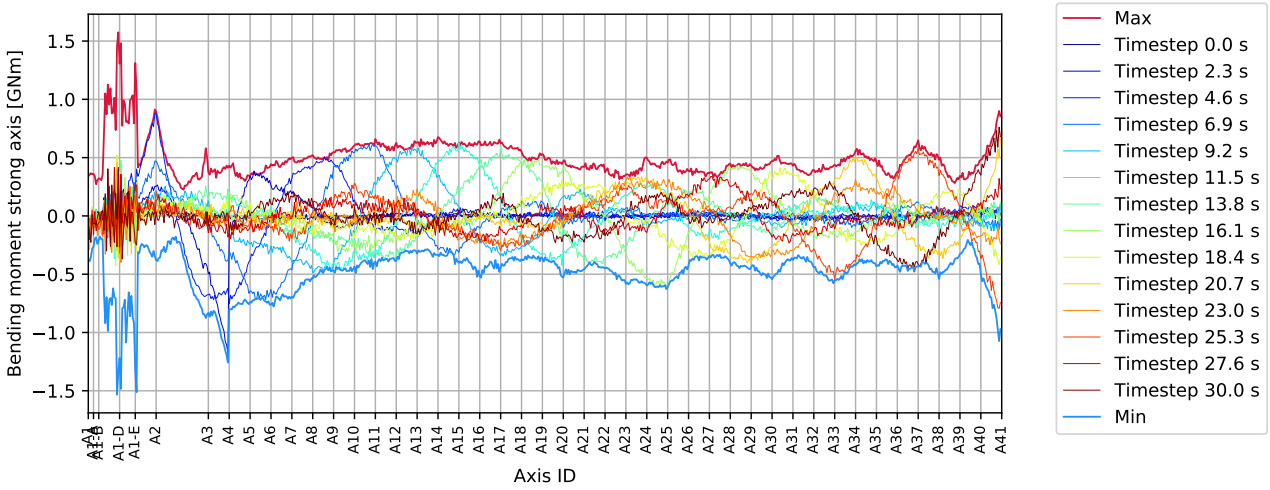

Figure 3.883: P A4 80deg - bridgegirder : Bending moment strong axis [GNm]

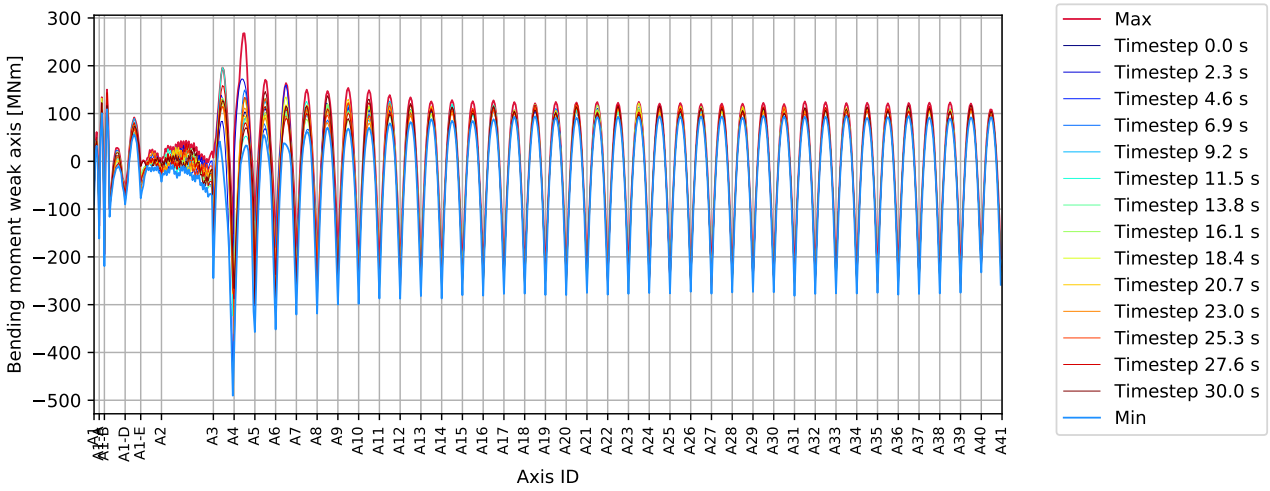

Figure 3.884: P A4 80deg - bridgegirder : Bending moment weak axis [MNm]