

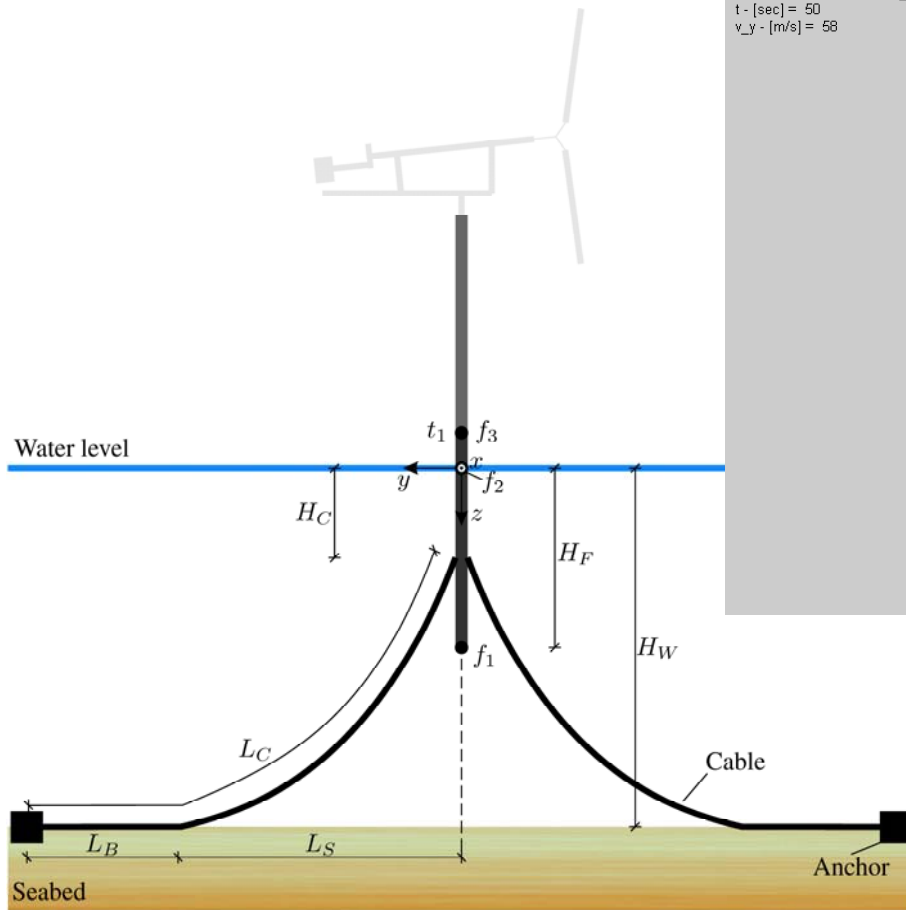


Siemens Wind Power

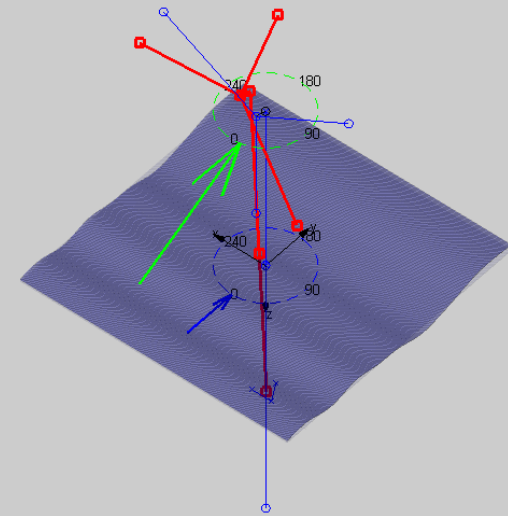
Modeling of floating foundation

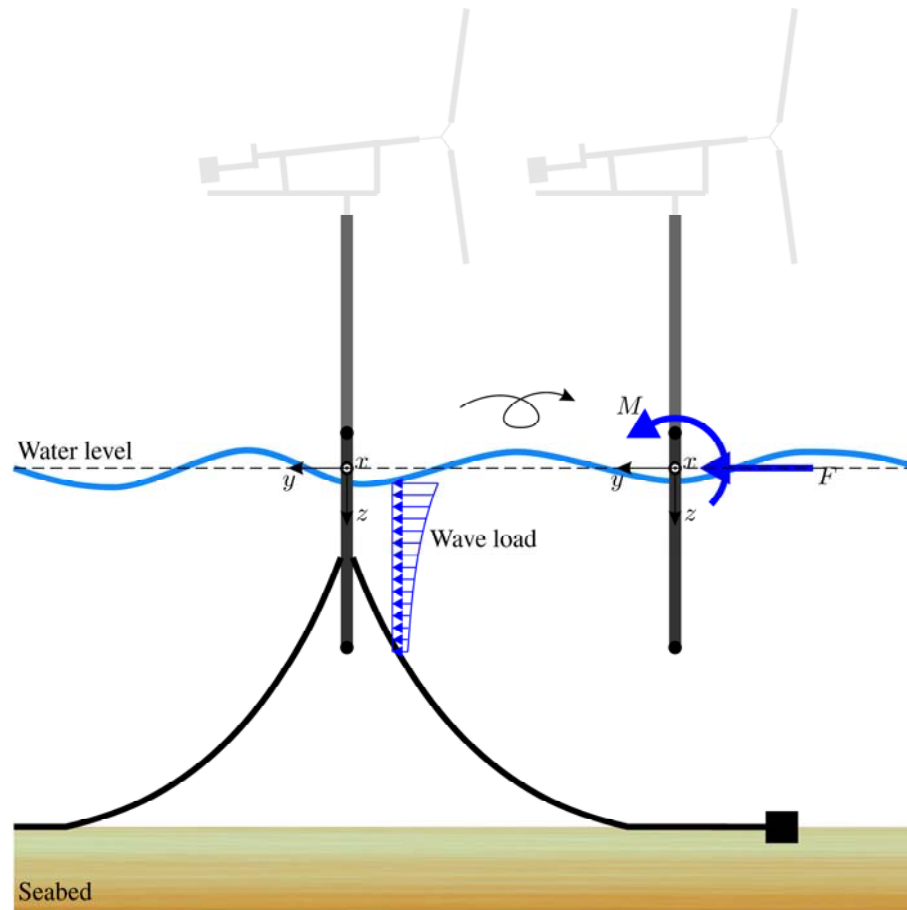
SIEMENS

Setup and simplifications

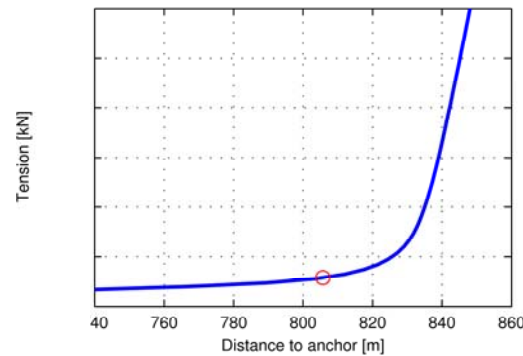
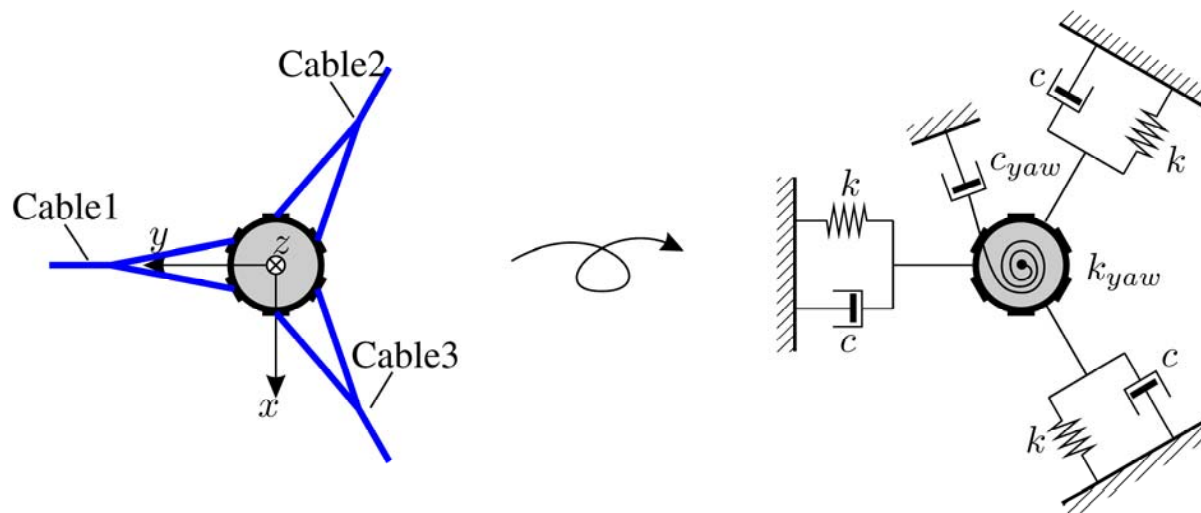


R:\BHawC\Sim\23mw\B40_H063_VS_HyWind\jjaK\Res\DL061a\bhr_61a504p_5_KSP_plot_set6.dat
t - [sec] = 50
v_y - [m/s] = 58

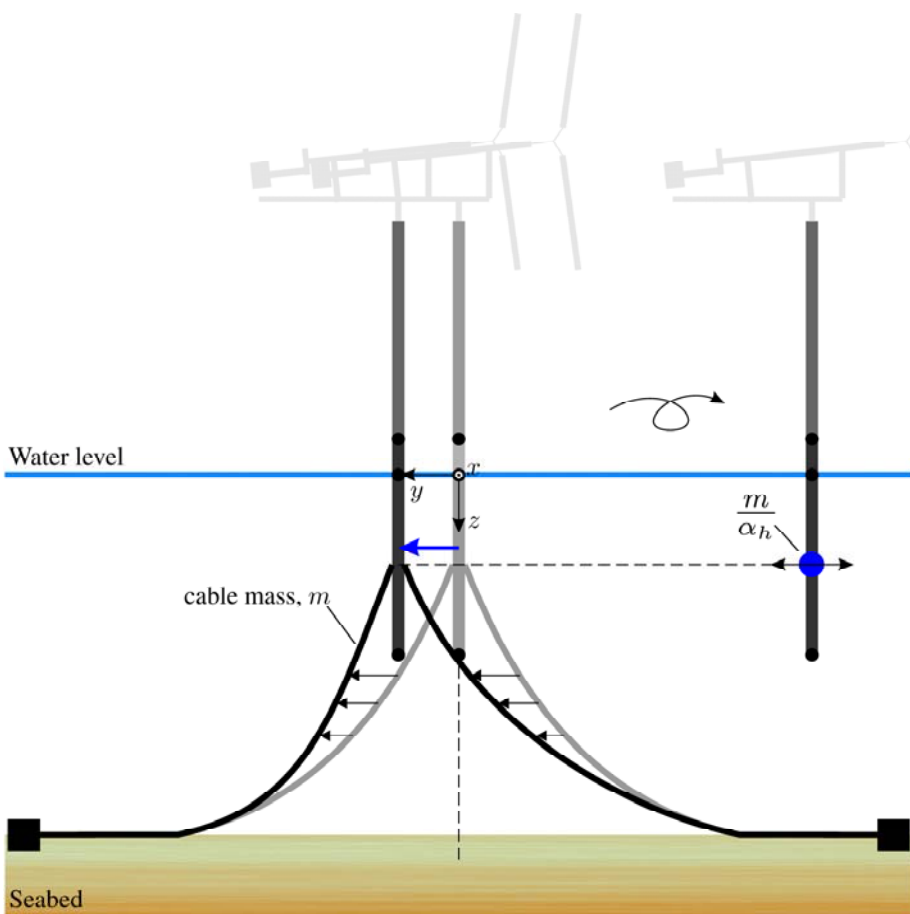




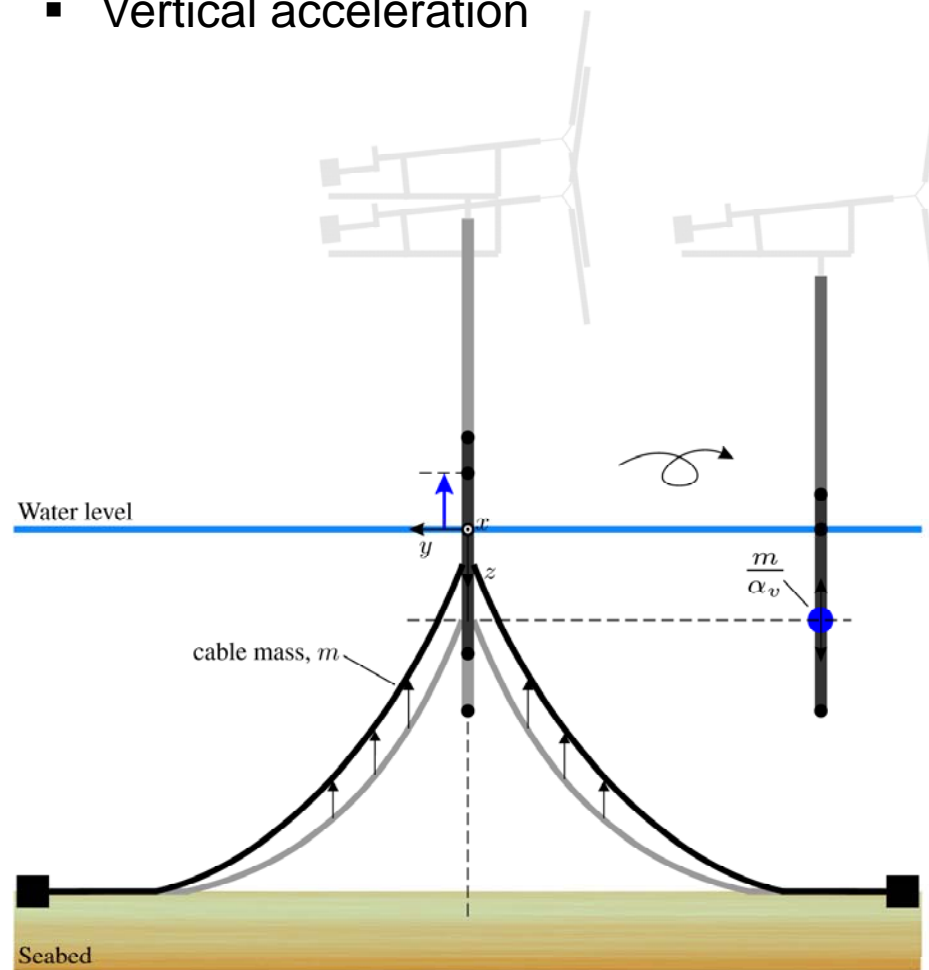
- Nonlinear stiffness provided by StatoilHydro

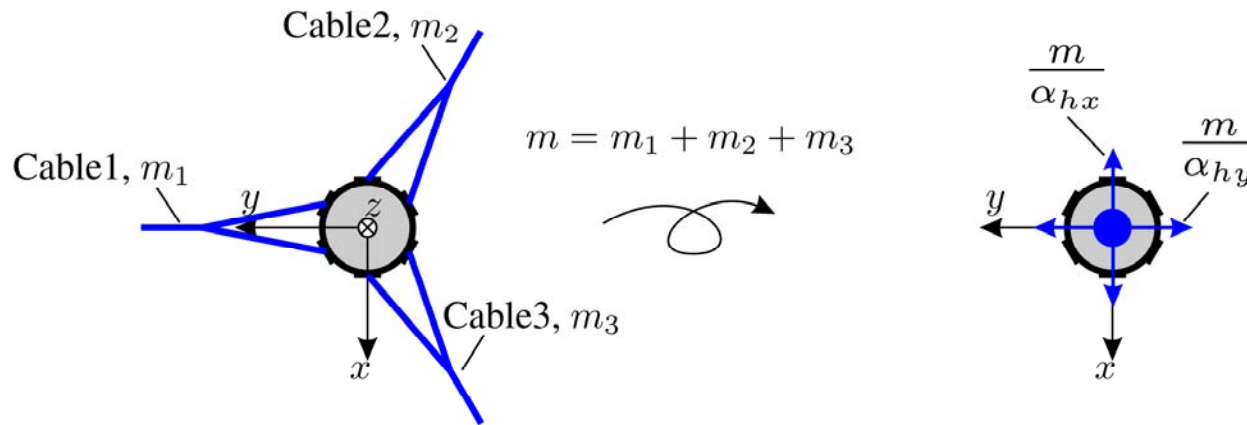


- Horizontal acceleration

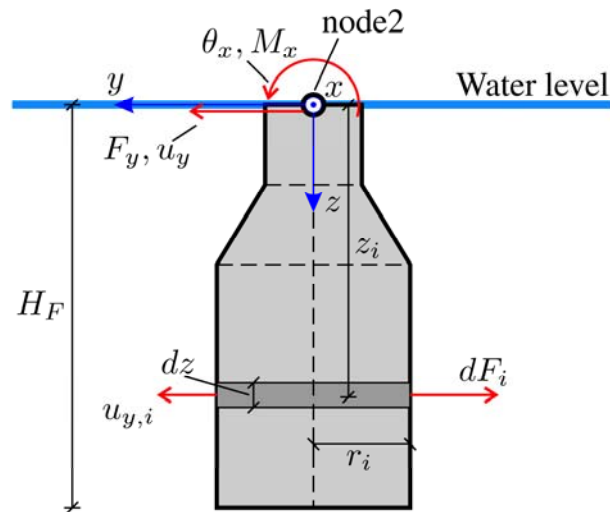


- Vertical acceleration





- Damping coefficients are used to calibrate decay simulations, for surge, sway, heave, roll and pitch. Yaw damping is purely from the cable displacements.
 - Only linear damping included
- Added mass is derived for the acceleration components at node 2.

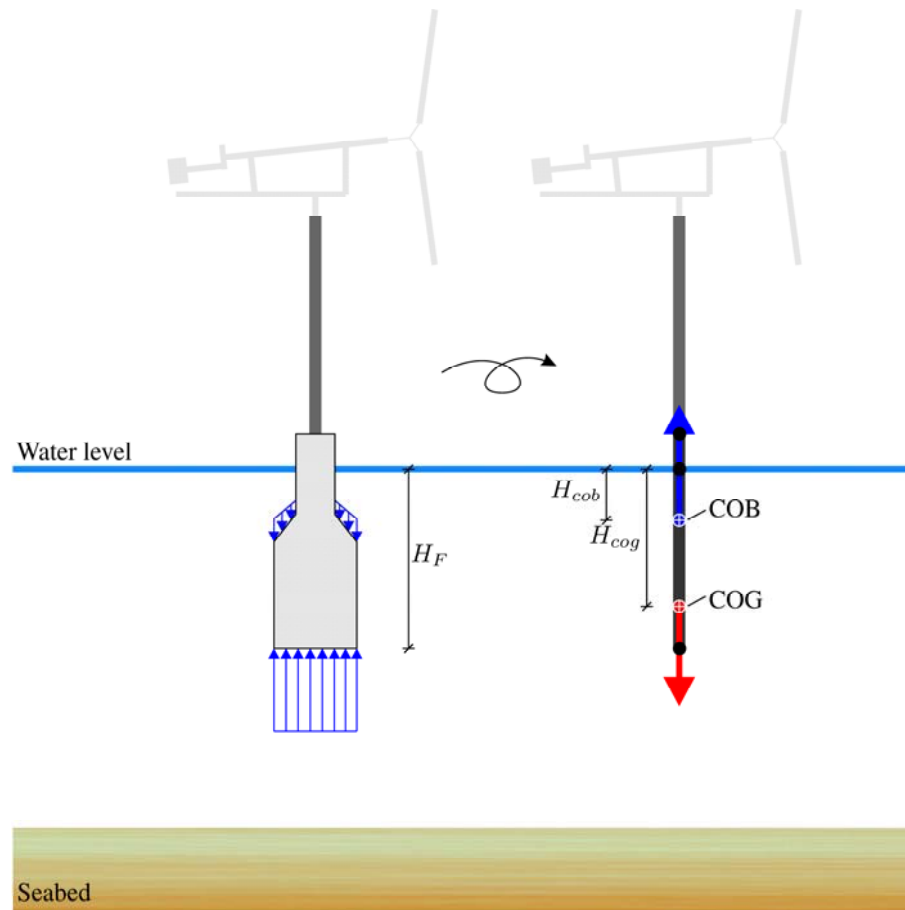


$$A_{i,2D} = \rho \pi r_i^2$$

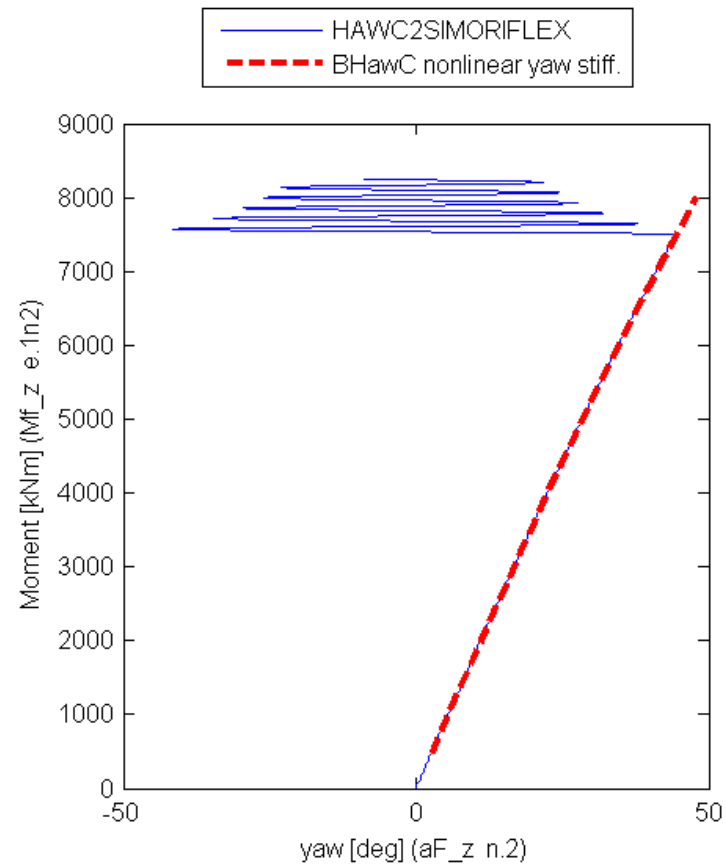
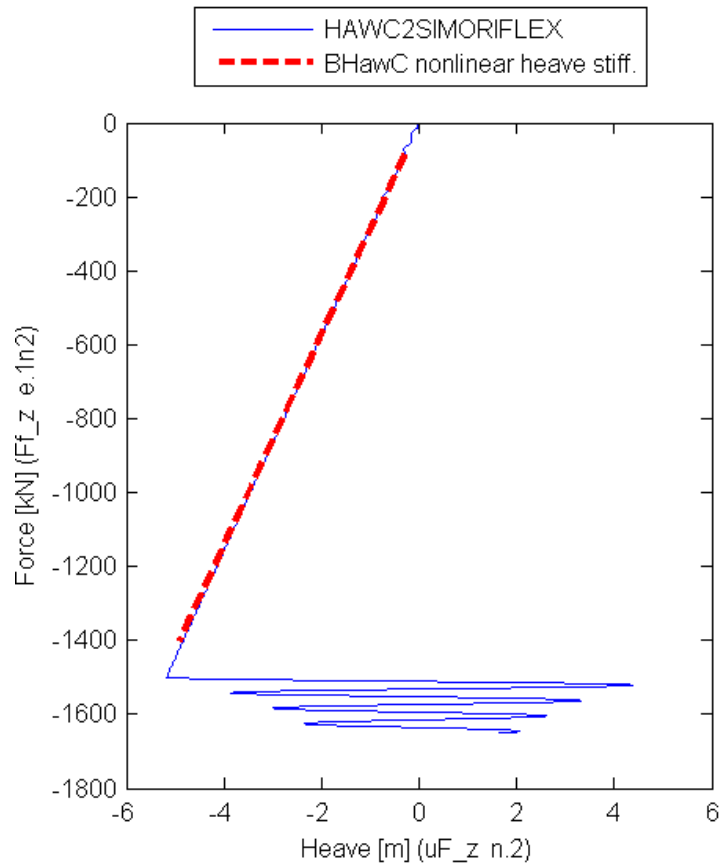
$$F_y = \ddot{u}_y M_{22} + \ddot{\theta}_x M_{24}$$

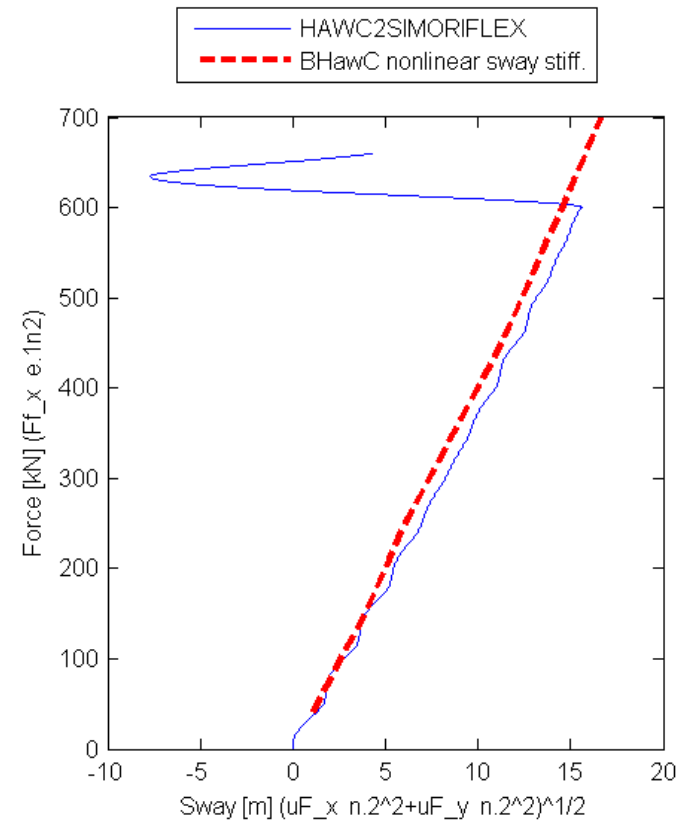
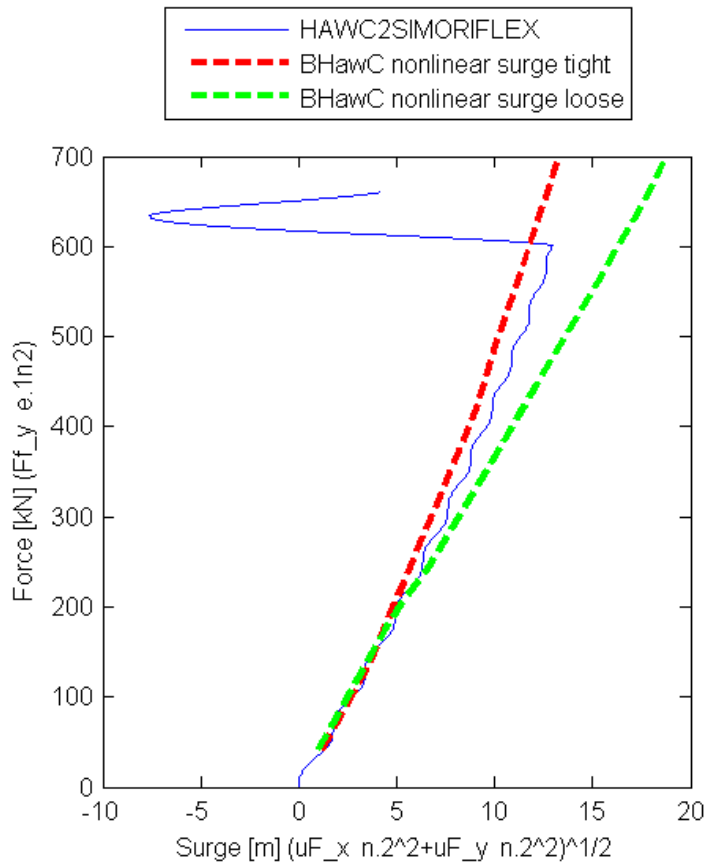
$$F_y = - \int_0^{H_F} dF_i$$

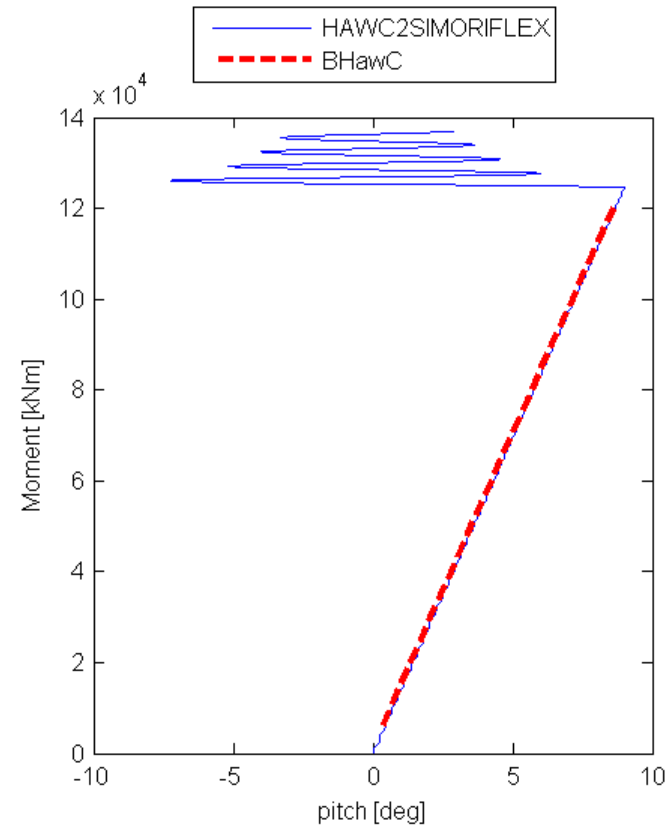
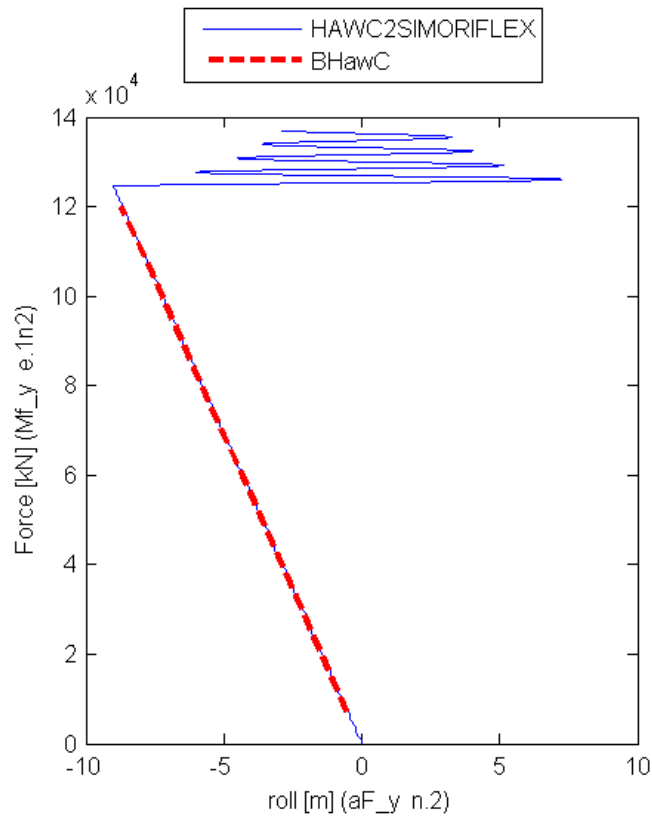
$$F_y = \int_0^{H_F} A_{i,2D} \ddot{\theta}_x z_i dz_i - \int_0^{H_F} A_{i,2D} \ddot{u}_y dz_i$$



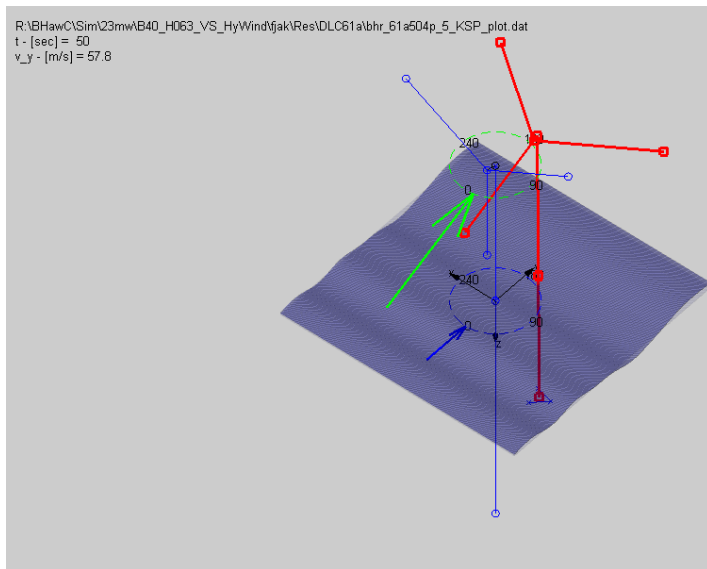
- Yaw input curve, extrapolated with constant slope



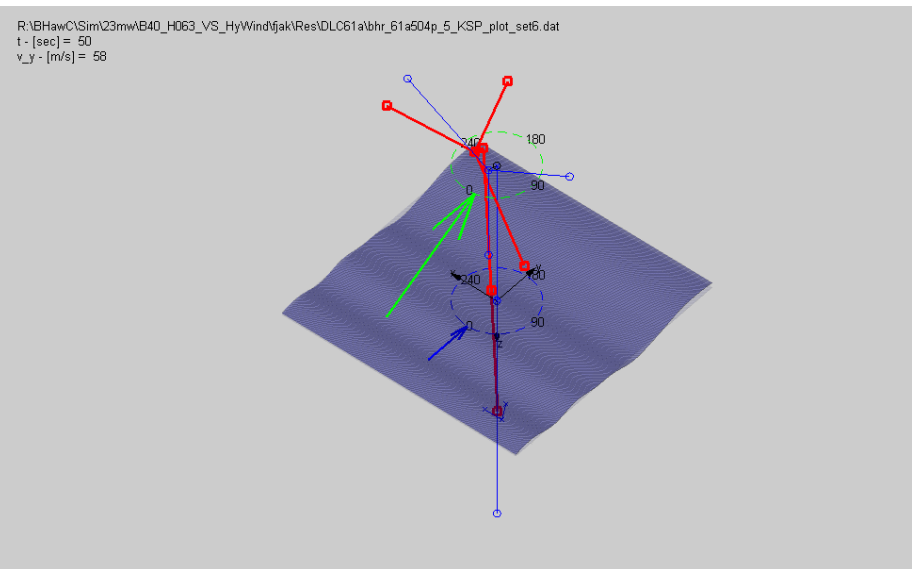


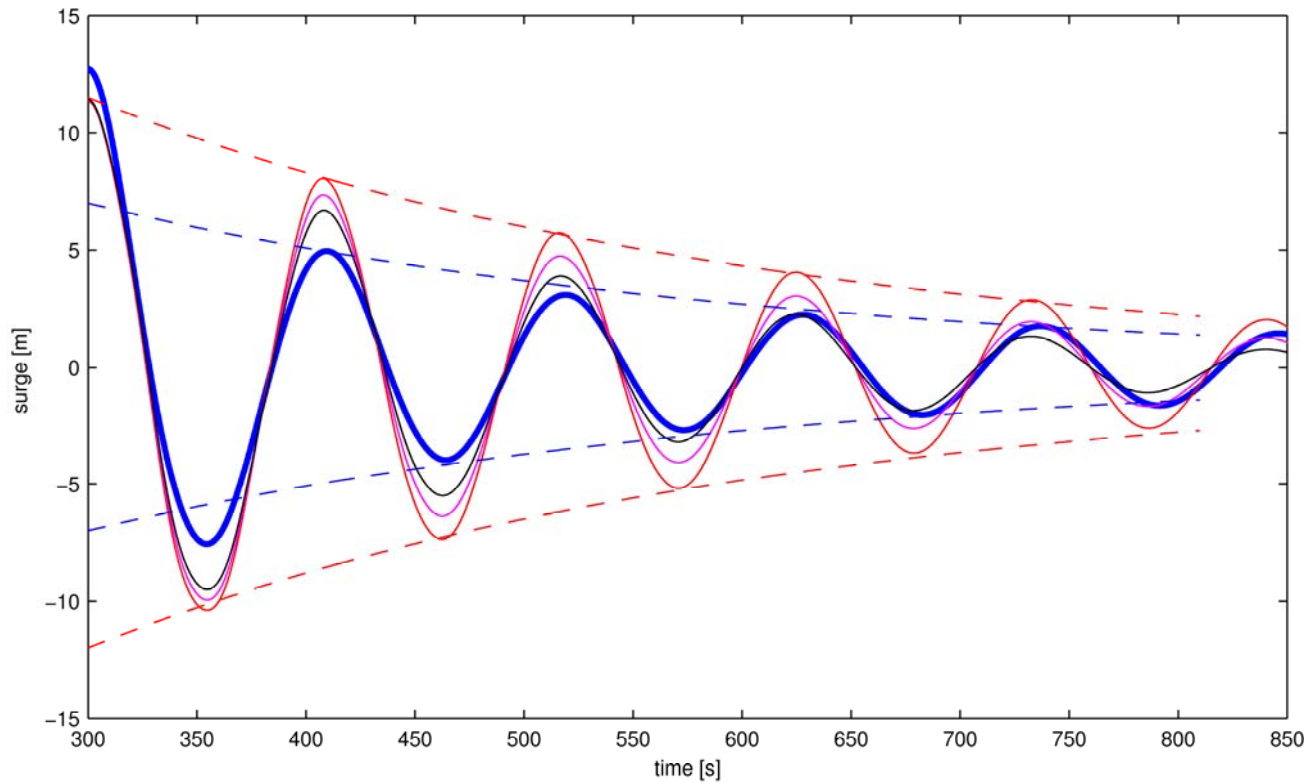


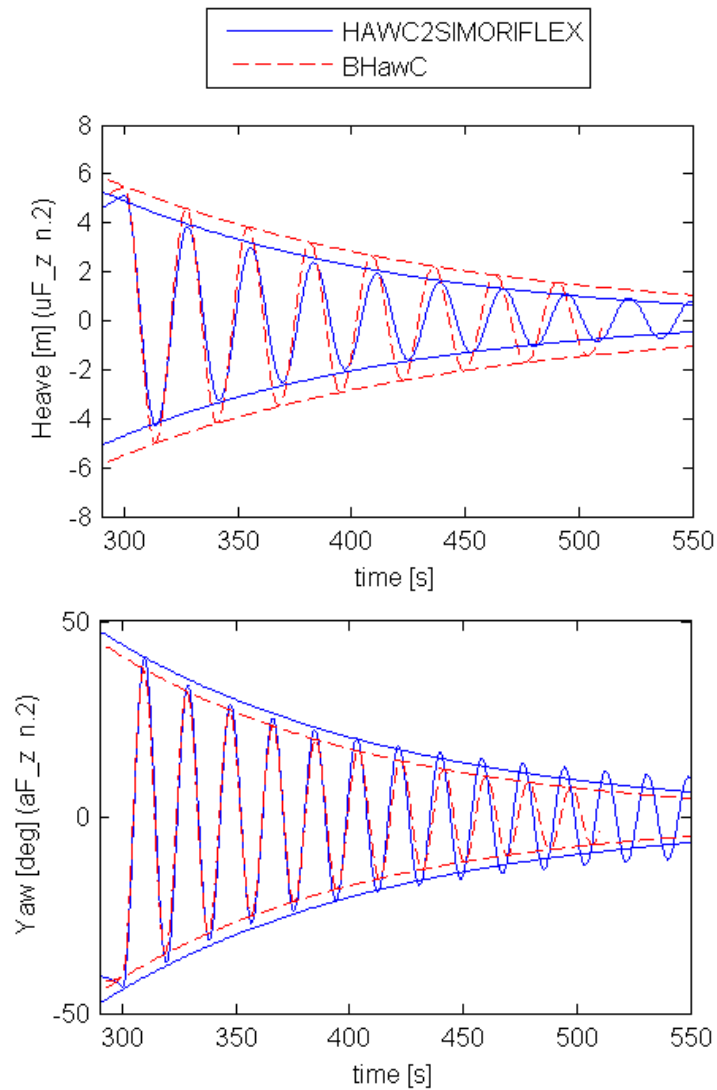
- Without delta lines



- Including delta lines







- Yaw damping from cable deformation