

## Development of a Cross-Platform MoorDyn V2 Interface for STAR-CCM+ and MATLAB

The proposed master thesis aims to develop a robust, cross-platform coupling between MoorDyn V2 and STAR-CCM+ as well as a callable interface from MATLAB to MoorDyn, both working on Linux and Windows. The work will focus on compiling MoorDyn V2 as a shared library on both operating systems and designing a clear, stable interface so that STAR-CCM+ can exchange motions and mooring forces with MoorDyn during time-domain simulations. In parallel, a MATLAB interface (e.g. via MEX functions) will be created to initialize, run, and post-process MoorDyn simulations directly from MATLAB, enabling faster parametric and control-oriented studies using the same mooring model. The thesis will include basic verification and a representative application case to demonstrate the consistency and usefulness of the developed tools, and will deliver documentation and example setups to facilitate their reuse in future research.