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Fluid Structure Interaction in STAR-CCM+



An overview of the challenges of FSI will be presented along with the capabilities available in the STAR-CCM+ to meet those challenges. The topics will include

- Data mapping techniques,
- Protocols and formats for exchanging data between CFD and CSM codes,
- Coupling methods for stability and accuracy,
- Techniques for dynamic fluid mesh evolution, and
- Validation of FSI results.

A technical overview under each of these topics will be provided.

A range of examples which demonstrate the STAR-CCM+ FSI capabilities and validate the accuracy will be shown. The examples span analytical and experimental problems of academic interest to large industrial applications in the aerospace, marine, and oil gas industries. Many of the examples will demonstrate the Co-simulation of STAR-CCM+ with either Abaqus/Standard or Abaqus/Explicit and will focus on aerodynamic examples related to flutter, equilibrium, vortex induced vibration, harmonic excitation and damping.

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Industries:

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