

Abstract Submitted
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The parallelization of the immersed interface method for flow around moving rigid objects¹ SHENG XU, Southern Methodist University —

To simulate flow around moving objects, the immersed interface method treats the objects as the fluid and recovers their effect on the surrounding flow by incorporating jump conditions across the surfaces of the objects into numerical schemes. In this talk, I will present some recent enhancement of the method toward its parallelization for flow around a large number of rigid objects of complex geometries in 3d. I will give an overview of the method, derive necessary jump conditions for objects represented by triangular meshes, and then discuss how to parallelize the method. Numerical examples will be shown to test the accuracy, efficiency and robustness of the method.

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