

Abstract Submitted  
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**Vortex Induced Oscillations of Cylinders at Intermediate Reynolds Numbers** ASHWIN VAIDYA, ROBERTO CAMASSA, BONG JAE CHUNG, ANGELE FREEMAN, PHILIP HOWARD, RICHARD MCLAUGHLIN, University of North Carolina, Chapel Hill — The orientational aspect of bodies interacting with fluids is a very fascinating subject. In this study we look at the orientation and dynamics of a hinged cylinder which is immersed in a flow and free to rotate in the direction transverse to the flow. In this presentation, we will systematically discuss our experimental observations on the oscillatory dynamics of the body and the various bifurcations that it undergoes with changing Reynolds numbers and particle inertia. We also hope to be able to discuss the vortex shedding process that gives rise to these oscillations and a three dimensional numerical simulation that is being attempted based on the Chimera grid method using a finite volume scheme.

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