

Abstract Submitted
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Direct Numerical Simulation of a Turbulent Wake behind a Body of Revolution at $Re_D = 5000$ ¹ FENGRUI ZHANG, YULIA PEET, RONALD ADRIAN, School for Engineering of Matter, Transport and Energy, Arizona State University — This study is concerned with the numerical investigation of a three-dimensional wake behind a body of revolution via Direct Numerical Simulations. Direct Numerical Simulations with the Reynolds number $Re_D = 5000$ based on the bluff body diameter are performed using a high-order spectral-element solver Nek5000. The focus of the study is on characterizing the wake asymmetries and low-frequency behavior observed in previous experimental studies with similar bluff body models. Modal analysis will be presented to show the wake dynamics in both the near-wake and the far-wake region.

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