

Abstract Submitted
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State estimation of turbulent channel flow CHRISTOPHER COLBURN, THOMAS BEWLEY, UC San Diego — The challenges involved in state estimation of wall-bounded turbulent flows are considered through computational experiments using a variety of measurement strategies (including wall information only). These experiments are part of a larger ongoing effort to develop high fidelity estimates of turbulent flows using the Ensemble Kalman Filter, a method used widely within the weather forecasting community, and other related estimation strategies. This study, which attempts to quantify rigorously the “propagation of information” in turbulent flows, might also help to shed some new light on various “top-down” versus “bottom-up” hypotheses currently being debated in the literature on near-wall and highly-sheared turbulent flows.

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