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**The Effect of Shape on the Wake of Low-Aspect-Ratio Wall-Mounted Obstacles**[1] SEYED HAJIMIRZAIE, JAMES BUCHHOLZ, University of Iowa — Wall-mounted bodies in boundary layer flows are ubiquitous in nature and engineering applications. We evaluate the role of shape on the wakes around three different low-aspect-ratio wall-mounted obstacles in shallow boundary-layer flow: semi-ellipsoids with the major axis of the base ellipse aligned in the transverse and streamwise directions, and a sphere. Despite their geometric simplicity, the obstacles create extremely complex, highly three-dimensional and unsteady flow fields for which the transport mechanisms of momentum and scalars are still not well-understood. All three obstacles have the same height and the aspect ratios considered are 0.67, 0.89 and 1, respectively. DPIV was used to interrogate the flow. Streamwise structures observed in the mean wake include tip, base, and horseshoe vortex pairs, which vary significantly in strength with changes in obstacle geometry. Significant variation in the strength of these structures with streamwise location suggests a complex connectivity with the mean spanwise arch structure in the near wake. The three-dimensional topology of the mean wake will be discussed.

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James Buchholz
University of Iowa

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