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The effect of seams on the aerodynamics of baseballs: A computational study. JOHN SCHEFFEY, RAJAT MITTAL, Johns Hopkins University — The aerodynamic force on a ball due to its rotation, known as the Magnus effect, has long been observed and studied in baseball and other ball sports. Recently, there has been interest in the potential existence of "non-Magnus" forces, which are thought to be caused by certain seam orientations in ball flight. We present numerical simulations of flows past rotating spheres at varying orientation angles of rotation and investigate the effects of baseball seams on the aerodynamics of such bodies. We examine the role that baseball seams play in modifying the wake and producing asymmetry, leading to transverse forces that generate deviations in the trajectory of pitched and batted balls.

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