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Flow Field of a Human Cough JEAN HERTZBERG, JULIE MEG VANSCIVER, SHELLY MILLER, University of Colorado, Boulder — Cough generated infectious aerosols are of interest while developing strategies for the mitigation of disease risks ranging from the common cold to SARS. In this work, the velocity field of human cough was measured using particle image velocimetry (PIV). The project subjects (total 29) coughed into an enclosure seeded with stage fog for most measurements. Cough flow speed profiles, average widths of the cough jet, waveform, and maximum cough speeds were measured. Maximum cough speeds ranged from 1.5 m/s to 28.8 m/s. No correlation was found for maximum cough flow speeds to height or gender. The slow growth of the width of the cough flow suggests that a cough may penetrate farther into a room than a steady jet of similar volume. The velocity profile was found to scale with the square root of downstream distance.

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