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Velocity and Vorticity in the Right Heart from 4DMRI Measurements JEAN HERTZBERG, University of Colorado Boulder, JAMES BROWNING, Northeastern University, BRETT FENSTER, National Jewish Health Center — Measurements of blood flow in the human heart were made using time-resolved 3D cardiac magnetic resonance phase contrast flow imaging (4DMRI). This work focuses on blood flow in the right ventricle (RV) and right atrium (RA) in both normal subjects and patients with pulmonary hypertension (PH). Although cardiac output is unchanged early in the disease, details of the flow field differ between normals and PH patients. In particular, vorticity at peak diastole has been found to correlate with PH. The underlying physics of this difference are being explored by a qualitative visual comparison of 3D flow structures in the vena cava, RA, and RV between healthy subjects and pulmonary hypertensive patients.

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