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Effect of cartilaginous rings on the fluid structures in a bifurcating tube HUMBERTO BOCANEGRA EVANS, LUCIANO CASTILLO, Texas Tech University — Fluid dynamical models of the respiratory system typically represent the bronchial tree as a collection of smooth tube bifurcations, ignoring the presence of cartilaginous rings in the first few generations, i.e. trachea and main bronchi. While accurate in certain instances, this simplification may considerably affect the results when the issue at hand is the dispersion and deposition of particles within the respiratory tract. In this study, we use a refractive index-matched particle image velocimetry facility to obtain velocity data in a scaled model of a bifurcating corrugated tube. We will present data on the fluid characteristics and how these are affected by cartilaginous rings.

Humberto Bocanegra Evans
Texas Tech University

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