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Plenary Lecture

MONOLITHIC SOLVER FOR BLOOD FLOW IN LARGE VALVED VEINS OF INFERIOR LIMBS

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Summary: Arteries are distensible, whereas veins are both distensible, enabling blood storage, and collapsible. Walk enhances venous return from extremities of inferior limbs, but also provokes backflow. Venous valves are aimed at limiting backflow magnitude. A monolithic formulation based on an Eulerian formulation of the full coupling system and a fluid-structure solver have been developed to model blood flow in deformable valved veins. A hyperelastic incompressible model is used to represent behavior of venous valves and wall.