

Abstract Submitted
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Experimental study of physiological flow in a cerebral saccular basilar tip aneurysm¹ WILLIAM TSAI, OMER SAVAS, University of California, Berkeley, JASON ORTEGA, DUNCAN MAITLAND, Lawrence Livermore National Laboratory, DAVID SALONER, University of California, San Francisco — The subject matter of the research is the flow within cerebral saccular basilar tip aneurysms and exploring correlations with their growth and rupture. The flow phantom consists of an inlet pipe branching out 90° into two outlets, simulating the basilar artery bifurcation and a nearly spherical dome at the flow divider simulating the aneurysm. Input flow is a physiological waveform for the basilar artery. Flow outlet branching ratios are controlled at will. Experiments are done at Reynolds numbers 221-376 and Sexl-Wormersley number 4.46. Flow visualization and particle image velocimetry are used to study velocity, vorticity, and wall shear stress. All flows can be characterized by an off-center inlet jet and a circulation region, whose transient strength and behavior depends on the outflow ratios.

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