

Abstract Submitted
for the DFD10 Meeting of
The American Physical Society

Effect of Parent Artery Geometry on Flow Through Cerebral Aneurysm MORGAN NOWAK, Syracuse University, HIROSHI HIGUCHI, TOSHIO NAKAYAMA, MAKOTO OHTA, Tohoku University, SYRACUSE UNIVERSITY COLLABORATION, TOHOKU UNIVERSITY COLLABORATION — The significance of parent artery geometry in aneurysm secondary flow is studied experimentally using PIV techniques. Several generalized models are used to obtain fundamental information on secondary flow structures, vortex dynamics and wall shear stress under a pulsatile flow. Time-dependent flow field through a model with the aneurysm on the lateral side of a curved parent artery is compared with that through a straight parent artery. The different wall shear stresses and fundamental structures seen within the aneurysm confirm the importance of the parent artery configuration in the development of aneurysm secondary flow. The experimental results are analyzed and compared with the numerical simulations.

Hiroshi Higuchi
Syracuse University

Date submitted: 06 Aug 2010

Electronic form version 1.4