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Evaluation of wall shear stress in a patient-specific model of a cerebral aneurysm using stereo PIV¹ YOSHINORI BANDO, Graduate school of Univ. of Tokyo, MASAMICHI OISHI, MARIE OSHIMA, IIS, Univ. of Tokyo — It is important to determine whether a particular cerebral aneurysm has a high risk of rupture or not so that it can be treated before subarachnoid hemorrhage occurs. Hemodynamic stresses, especially Wall Shear Stress (WSS), are considered to play an important role in formation, growth and rupture of the cerebral aneurysm. In this paper, we investigate WSS under the pulsatile inflow conditions in a realistic in vitro model of a cerebral aneurysm. The geometry model is constructed in a patient-specific manner using CT data. The stereo PIV measurement is conducted to obtain the velocity field in the model and to derive WSS distribution from PIV results and geometry data of lost model. The results show that overall WSS distribution in the model does not change uniformly with time due to pulsatile flow.

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