FSI and reduced models for 3D hemodynamic simulations in time-dependent domains

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In the talk we briefly present our approach to fluid-structure interaction (FSI) simulations [1, 2] and consider three biomedical problems for flow in time-dependent domains which can be solved by simpler formulations than the FSI formulation: blood flow in the human ventricles [3, 4, 5], blood flow in the aortic bifurcation [6], coaptation characteristics of the aortic valve [7]. The numerical schemes are summarized in the book [8].

This is the joint work with M.Olshanskii, A.Lozovskiy, A.Danilov, T.Dobroserdova, G.Panassenko, V.Salamatova, A.Lyogkii.

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