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## NUMERICAL SIMULATION OF AEROHYDRODYNAMIC AND AEROHYDROELASTICITY PROBLEMS

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Aerohydrodynamics and aerohydroelasticity problems (also known as Fluid-Structure Interaction (FSI) problems) cause big and uninterrupted interest in science, industry, biomedicine and other applications. Preconditions for a detailed study of the nature of aerohydroelasticity and the search for methods that let to predict consequences of strong wind impact and solve coupled problems related to the civil engineering were a series of tragic cases of collapse and dangerous structural vibrations as a result of the occurrence of aerodynamic instability (like vibrations of bridges and flexible building structures interacting with wind flow), as well as the destruction of thin-walled metallic tanks with liquid under intense seismic loads. Mentioned problems, characteristic and scientifically significant for very diverse technical applications are still far from their exhaustive solution and require scientific and methodological and program-algorithmic research and development. Present work gives an overview of the existing techniques for solving the considered problems; demonstrates developed numerical technique, based on effective mathematical models and numerical methods; deals with the verification and approbation of the developed numerical technique.

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