FM3S_11031

XXI International Congress of Theoretical and Applied Mechanics
Warsaw, Poland, August 15–21, 2004

Simulation of Flame Propagation in a Tube with Obstacles

Aidarkhan Kaltayev, Zhomart Ualiev

al-Farabi Kazak National University, Department of Mechanics, Almaty, Kazakstan

A fictitious domain method (FDM) is extended and implemented for time dependent combustion problems in non-regular closed domains. FDM allows to work in regular domains using regular meshes independently of the geometry of the actual domains. Up to now a FDM was used for solving the problems of physics with Dirichlet boundary conditions. In the paper a fictitious domain method is extended and implemented for combustion problems in non-regular domains. The propagation of 2D laminar methane-air flame in a tube with obstacles are simulated and studied.

View the extended summary