

Hydrodynamic and thermomechanical effects in composite materials under intense energy flux exposure

Boykov D.S.^{1,®}

¹ Keldysh Institute of Applied Mathematics of the Russian Academy of Sciences, Miusskaya Square 4, Moscow, 125047, Russia

® boykovds@imamod.ru

A computational model is presented in this work for the study of thermomechanical and hydrodynamic effects in composite materials under intense energy flux conditions. The model simulates heating, vaporization, gas dynamics, and solid deformation, allowing for the investigation of their interdependencies [1]. The simulation results can be applied for predicting the performance of composite materials in various high-energy applications and guiding the development of new materials with enhanced resistance to extreme environments.

[1] Boykov D S 2024 *Math. Models. Comput. Simul.* **16**(6) 906—916