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1D Gas-Dynamic Simulation of Shock-Wave Processes via Internet PAVEL LEVASHOV, MIKHAIL POVARNITSYN, KONSTANTIN KHISHCHENKO, Joint Institute for High Temperatures RAS, Moscow, Russia — We present a web-interface, which allows one to perform a 1-dimensional gas-dynamic simulation of typical shock-wave processes via the Internet using the database on shock-wave experiments and equations of state. In this interface a user can supply initial conditions, control the process of simulation and make a treatment of the results. Up to seven objects can take part in the experiment; for every object a substance, its initial position and velocity, equation of state and destruction pressure should be defined. The simulation itself is based upon the Eulerian second order Godunov approach. To start computations, the user also has to set the final time, grid "coarseness" and the number of moments in which the output of necessary parameters will take place, including initial and final. Additionally, the user can define several Lagrangian markers to trace the state of matter at a given initial coordinate. At the end of simulation the user can analyze the profiles of different values at different times or at points with the specified coordinates of Lagrangian markers both as charts and in textual form. The main advantage of this system is the possibility to use in simulation all equations of state available in the database (more than 130). The system is available freely via addresses http://teos.ficp.ac.ru/rusbank/, http://www.ihed.ras.ru/rusbank/.

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