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**International Shock-Wave Database: Current Status**[1]

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Shock-wave and related dynamic material response data serve for calibrating, validating, and improving material models over very broad regions of the pressure-temperature-density phase space. Since the middle of the 20th century vast amount of shock-wave experimental information has been obtained. To systemize it a number of compendiums of shock-wave data has been issued by LLNL, LANL (USA), CEA (France), IPCP and VNIIEF (Russia). In mid-90th the drawbacks of the paper handbooks became obvious, so the first version of the online shock-wave database appeared in 1997 (http://www.ficp.ac.ru/rusbank). It includes approximately 20000 experimental points on shock compression, adiabatic expansion, measurements of sound velocity behind the shock front and free-surface-velocity for more than 650 substances. This is still a useful tool for the shock-wave community, but it has a number of serious disadvantages which can't be easily eliminated: (i) very simple data format for points and references; (ii) minimalistic user interface for data addition; (iii) absence of history of changes; (iv) bad feedback from users. The new International Shock-Wave database (ISWdb) is intended to solve these and some other problems. The ISWdb project objectives are: (i) to develop a database on thermodynamic and mechanical properties of materials under conditions of shock-wave and other dynamic loadings, selected related quantities of interest, and the meta-data that describes the provenance of the measurements and material models; and (ii) to make this database available internationally through the Internet, in an interactive form. The development and operation of the ISWdb is guided by an advisory committee. The database will be installed on two mirrored web-servers, one in Russia and the other in USA (currently only one server is available). The database provides access to original experimental data on shock compression, non-shock dynamic loadings, isentropic expansion, measurements of sound speed in the Hugoniot state, and time-dependent free-surface or window-interface velocity profiles. Users are able to search the information in the database and obtain the experimental points in tabular or plain text formats directly via the Internet using common browsers. It is also possible to plot the experimental points for comparison with different approximations and results of equation-of-state calculations. The user can present the results of calculations in text or graphical forms and compare them with any experimental data available in the database. A short history of the shock-wave database will be presented and current possibilities of ISWdb will be demonstrated. Web-site of the project: http://iswdb.info.

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