

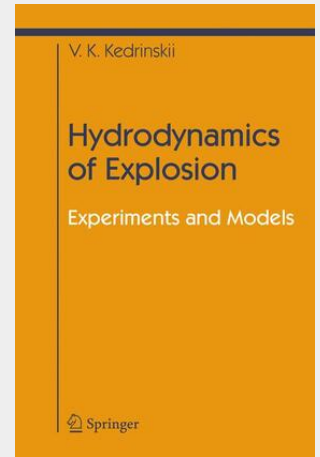
Kedrinskiy

Hydrodynamics of Explosion

Experiments and Models

Hydrodynamics of Explosion presents the research results for the problems of underwater explosions and contains a detailed analysis of the structure and the parameters of the wave fields generated by explosions of cord and spiral charges, a description of the formation mechanisms for a wide range of cumulative flows at underwater explosions near the free surface, and the relevant mathematical models. Shock-wave transformation in bubbly liquids, shock-wave amplification due to collision and focusing, and the formation of bubble detonation waves in reactive bubbly liquids are studied in detail. Particular emphasis is placed on the investigation of wave processes in cavitating liquids, which incorporates the concepts of the strength of real liquids containing natural microinhomogeneities, the relaxation of tensile stress, and the cavitation fracture of a liquid as the inversion of its two-phase state under impulsive (explosive) loading. The problems are classed among essentially nonlinear processes that occur under shock loading of liquids and may be of interest to researchers in physical acoustics, mechanics of multiphase media, shock-wave processes in condensed media, explosive hydroacoustics, and cumulation.

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