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HYPUF/PC

Stress Wave Response Code for PC Computer

HYPUF/PC is a stress wave response code that has the ability to calculate ionization effects in high temperature, high-density plasmas. As such, HYPUF/PC is a derivative of the PUFF-66 code. HYPUF is also a code for any defense contractor having need to calculate the response of materials to radiation induced stress waves.

The modification to present **HYPUF/PC** code available in PC program is part of a continuing program to provide a code suitable for analysis of material interaction with X-ray lasers and other high intensity radiation sources. Previous version of this code included automatic zoning, rezoning and spall (fracture) capabilities. The modifications in the present code include elastic-viscoplastic, Maxwell dispersion, and Bade geometric dispersion material response models, restructuring of the code to facilitate future modifications and numerous minor corrections to the equation of state and ionization equation of state subroutines. All above three models are incorporated as closely as possible to the way they were implemented in PUFF74 code. The only differences between the implementation in the two codes was that imposed by the fact that HYPUF/PC is a temperature based rather than energy based code and that **HYPUF/PC** has its equation of state package completely separate from the HYDRO routine.

The elastic-viscoplastic model is an extension of the elastic-plastic model, which is used to calculate stress deviators in solid materials. In the elastic-viscoplastic model, the stress deviator can overshoot the yield surface value. The stress deviator is computed incrementally from the differential equation.

Galaxy Advanced Engineering, Inc. (GAE) has taken the steps to produce the PC version, (i. e **HYPUF/PC**). Currently the program is operating on PC or 100% compatibles under PC/DOS or MS/Windows95/98/2000/XP/ME and NT operating system. To order this code, please contact us at (650) 302-3993