

CORRELATION OF TRUCK CODE WITH SMALL SCALE SHOCK TUBE EXPERIMENTS

BELLIVEAU,L.J.; FIORAVANTE,E.M.

The TRUCK code is used throughout the Army to analyze the response of vehicles to shock waves. The aerodynamic description of the vehicle, in the TRUCK code, consists of rectangular boxes (40 or less) of moderate size. Far more detailed descriptions with many more boxes of much smaller size exist for other types of analyses. A series of unclassified small-scale shock tube experiments on 1/30 scale models were performed at ARL. These experiments permit study of loading and response differences to see if it is possible to use these existing more detailed descriptions in TRUCK, and what changes might be desirable. Issues of aspect ratio correction, box size correction, and time step adjustment (because of the smaller box sizes) are discussed. It does appear that TRUCK can be adjusted to handle the more detailed descriptions, but that faster computers may be necessary to handle the smaller time steps.