EQUATION OF STATE OF SHOCK COMPRESSED GASES AT MEGABAR PRESSURE RANGE

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Model for equation of state of warm dense matter based on chemical picture was used for calculation of principal Hugoniots of hydrogen deuterium and helium, calculation of thermodynamics for reshock states and third-shock reverberation of deuterium and isentropically compressed helium. Coulomb interaction of charged particles, short-range repulsion and attraction of heavy particles and partial degeneracy of free electrons was taken into account. The calculation results were compared with gas-gun, explosive, magnetically launched flyer-plate, laser experiments and with the results of the first-principle modeling.