

Abstract Submitted
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Semiempirical multiphase equation of state of liquid hydrogen

PYALLING ALEXEI, IPCP RAS — Semiempirical equations of state for dielectric and plasma phases of liquid hydrogen were constructed. Dielectric phase was modeled as dissociating molecular – atomic mixture. This allowed to reproduce experimental results for single shock compressed hydrogen. Equilibrium line of plasma phase transition was built. For quasi isentropic compression the plasma phase transition occurs at the pressure 130 GPa, according to the current model. Model reproduces the experimental results for conductivity of compressed hydrogen under assumption that plasma phase clusters are formed in the dielectric phase of hydrogen.

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