Abstract Submitted for the SHOCK11 Meeting of The American Physical Society

Anomalous Wave Structure in Diverging Geometry by Nonconvexity of the Equation of States KYUWAN HWANG, Agency for Defense Development — It is well known that a non-convex equation of states(EOS), which is defined by Thompson's "fundamental derivative" \mathcal{G} being negative, can be developed for materials near phase transition, or plasma under specific conditions. Nonconvexity of EOS leads to anomalous wave structure including rarefaction shock and composite waves as solution of the scale-invariant Riemann problem in flat geometry. This phenomenon is well understood and compiled into excellent review papers, for example Menikoff and Plohr. Recently, a numerical study is performed using a model EOS by Heuze, at. al. In this presentation, we studied numerically the anomalous wave structure developed by non-convex EOS in the system with geometric divergence, which breaks the scale invariance assumption.

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Date submitted: 18 Feb 2011

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