Abstract Submitted
for the SHOCK13 Meeting of
The American Physical Society

On the weak shock limit (WSL) in condensed matter NEIL BOURNE, AWE Aldermaston Reading Berkshire RG7 4PR — The response of materials under shock encompass a range of pressure levels that span a region from the elastic limit up to the *finis extremis* at which the material enters the warm dense matter regime. Between these bounds the material spans two distinct regimes characterized by different wave profiles and responses. These are general known as the strong shock and weak shock regimes. The boundary between these is simply described by the overtake of the shock over the elastic wave to form a single rather than a two-wave structure. However this threshold corresponds to a change from an unsteady region to a single zone that corresponds to a series of physical thresholds being exceeded. This paper describes some of these and explores their consequences upon observed response with emphasis on steady and unsteady regions at relevant length scales.

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Date submitted: 15 Feb 2013 Electronic form version 1.4