## Abstract Submitted for the SHOCK05 Meeting of The American Physical Society

Effect of Shock Induced Shear on Spall Strengths of Materials DATTATRAYA DANDEKAR, US Army Research Laboratory, Aberdeen Proving Ground, Maryland 21005 — This work examines the effect of shock induced shear under simultaneous compression-shear loading on spall strengths of ductile and brittle materials. The working assumption is that if deformation of a material is dominantly ductile i.e., elastic-plastic, then magnitude of its spall strength under normal shock, and under simultaneous compression-shear loading may not differ significantly. On the other hand, if deformation of a material is dominantly brittle i.e., through crack propagation, then magnitude of its spall strength under simultaneous compression-shear loading may be significantly less than its value under normal shock wave loading. The results of a few spall experiments conducted on Ti-6Al-4V, tungsten carbide, and silicon carbide appear consistent with the above stated assumption.

Dattatraya Dandekar US Army Research Laboratory, Aberdeen Proving Ground, Maryland 21005

Date submitted: 05 Apr 2005 Electronic form version 1.4