

Abstract Submitted
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Estimating the Resistive Strength of Dense Particle Suspensions During Ballistic Penetration OREN PETEL, Carleton University, Ottawa, ON, Canada, K1S 5B6 — In the present study, data that has been collected on the ballistic penetration of several dense particle suspensions are examined using simple analytical penetration models. Through measurement of the incident and residual velocities of the projectile through the suspensions, an estimate of the effective measure of the resistive strength of these suspensions to penetration is made. The discussion of these results will focus on the influence of the choice of material of the suspended particles as well as their concentration within the suspensions on the strength estimates. This effective strength parameter will also be considered in contrast to previous measurements of material strength for the same mixtures that were taken from a series of plate impact experiments. The variation of this strength parameter as a function of the incident velocity of the projectile will be used to discuss the influence of the relative compressibility within the suspensions on the bulk response of the multiphase system during penetration.

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