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In situ Characterization of Projectile Penetration into Sand Targets JOHN BORG, PETER SABLE, Marquette University, MARQUETTE UNIVERSITY TEAM — This work presents the results from dynamic penetration experiments in which long rod projectiles were launched between a velocity range from 35 m/s to 350 m/s into a visually accessible sand target. Stress measurements of the transmitted waveforms were simultaneously collected from a piezoelectric load cells buried in the sand at various locations relative to the shot line. Image correlations were used to extract velocity fields from the photographic record and correlated to the transmitted stress wave profiles. Simulations were used to better understand the dynamic fracture of grains in the near nose region of the projectile. Together these experimental and simulated results further our understanding of high speed granular penetration events.

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