

## **SIMULTANEOUS MULTI-BURST GROUND SHOCK PHENOMENA**

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The simultaneous detonations of either nuclear or conventional munitions have the significant potential of dominating the mechanical effects of blast and shock on military targets. Recent experiments employing near-simultaneous detonations of 1000 pound TNT spheres and then 120 ton ANFO cylinders with a hemispherical end-cap have been conducted in alluvial geologies. Measurements taken include surface air overpressures and at-depth accelerations, velocities, soil stresses, and soil strains. Nearly 1500 active measurements have been made. Preliminary results indicate that serious non-linearities of ground-motion exist that could severely damage on targeted, shallow-buried military structures. An assessment is made of the ground-motions taken on these experiments,. Results are compared with existing theoretical models attempting to replicate the experimental data. Some implications regarding anticipated failure modes on shallow-buried structures will be given.