

GROUND SHOCK AND CRATERING FROM HIGH EXPLOSIVES

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Ground shock and cratering have been successfully calculated for high explosive detonations near the ground. Two-dimensional Eulerian hydrodynamic calculations of half-buried charges of TNT in a wet volcanic tuff medium have been completed for a range of masses from 0.005 to 500 kt. Detailed information on energy coupling, air blast, ground shock attenuation, earth motion histories and crater sizes will be discussed. For the larger charges, material cohesion no longer dominates the behaviour of the ground motions; the overburden pressure which increases the material shear strength becomes increasingly important. We will show the importance of gravity effects for large yields and will dispute the validity of cube root scaling over an arbitrarily large range of yields.