

EFFECTS OF INITIATOR POSITION ON NEAR-FIELD BLAST FROM CYLINDRICAL CHARGES

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ABSTRACT

A set of numerical simulations was performed to study the blast fields resulting from a cylindrical explosive charge when the point of the initiation of the explosive was varied. Four initiation configurations were studied: (1) initiation at a point at the center of the charge, (2) simultaneous initiation at all points along a line passing through the axis of the charge, (3) initiation of the charge from the center point of one end of the cylinder, and (4) simultaneous initiation of the charge from the center points of both ends of the cylinder. The blast fields were evaluated by comparing the peak dynamic pressures and dynamic pressure impulses along lines parallel to the charge axis at various distances from the charge. The study revealed that initiating the charge simultaneously from each end results in high dynamic pressures and impulses focused at the midplane of the charge radiating outward.