BLAST WAVE CHARACTERISTICS OF EXPLOSIVES CHARGES

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Several formulations have been published to define the characteristic parameters of an incident blast wave. In the almost of works, the charge is a TNT explosive charge and the overpressure is the mainly parameter examined.

Hence, a state of art of these relations is proposed in this paper for this explosive and by considering all parameters. Furthermore, an investigation based on two another explosives, ANFO and PETN, is conducted.

For that, the calculations are conducted with AUTODYN, CONWEP and BEC. This work considers the positive overpressure, the positive impulse and the positive duration with AUTODYN, CONWEP, BEC. The positive overpressure are too calculated by using a new forensic software ASIDE of IRCGN for crime scene investigations. The evolution of these blast wave parameters are expressed by laws as a function of reduced distance (distance over the cubed root of explosive mass) and compared to TNT charge. From the comparisons of ANFO and PETN, TNT equivalents are expressed in terms of pressure and impulse versus the reduced distance.