

EFFICIENT COMPUTATIONAL ASSESSMENT OF BLAST EFFECTS IN URBAN SCENARIOS

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ABSTRACT

A methodology for the computationally efficient prediction of blast effects of explosions in urban environments is presented. The methodology is based on the utilization of digital city models, a specialized CFD software and a library of damage-models. The methodology has been developed to support EOD work (Explosive Ordnance Disposal) by providing realistic estimates for explosive hazards within short response times. The short response time is achieved through an automatized data processing chain, an efficient high-resolution CFD method with dynamic mesh adaptation and a residual error correction concept. In this paper the concepts, methods and models are described. An example of an urban scenario and an experimental validation are presented.