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## 隔板对聚能射流性能影响的数值模拟(PDF)

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Title: Numerical Simulation of the Effect of Wave-shaper on Shaped Charge Jet's Performance

作者: [李如江<sup>1</sup>](#); [张晋红<sup>1</sup>](#); [王建波<sup>2</sup>](#)

1 中北大学化工与环境学院,太原 030051; 2 中国兵器工业第52研究所,山东烟台 290014

Author(s): [LI Rujiang<sup>1</sup>](#); [ZHANG Jinhong<sup>1</sup>](#); [WANG Jianbo<sup>2</sup>](#)

1 School of Chemical Engineering and Environment, North University of China, Taiyuan 030051,China; 2 No.52 Research Institute of China Ordnance Industries, Shandong Yantai 264003,China

关键词: [爆炸力学](#); [聚能装药](#); [隔板](#); [爆轰波形](#); [射流速度](#)

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摘要: 为研究隔板对聚能装药中爆轰波形和射流形成的影响,应用LS-DYNA有限元程序,采用ALE方法对某带隔板聚能装药射流的形成过程进行了三维数值模拟,并与试验结果进行了比较。计算结果表明,隔板可将球面爆轰波形转变为凹锥形爆轰波,使爆轰波相对于药型罩母线的入射角减小;当隔板厚度不变,存在着最佳隔板直径,小于最佳直径时射流头部速度随隔板直径的增加而增加,反之则会降低;双截锥形隔板可使爆轰波与罩母线的夹角减小到 $12^\circ$ ,射流头部速度比无隔板时提高了约18%。

Abstract: Results were presented by three-dimensional simulation of the detonation development in the shaped charge with wave-shaper. The calculation was performed using finite-element code LS-DYNA, the calculated jet head velocity was in good agreement with experimental result, based on this, the effects of various wave-shaper material and configurations on jet performance were analyzed. It suggests that spherical detonation wave is converted into a converging detonation wave by a wave shaper, and the attack angle of detonation front decrease. There is an optimum diameter when the thickness is kept constant, jet tip velocity increases with the wave-shaper diameter, but decreases when it is larger than this value. The attack angle of detonation front with double truncates cone wave shaper is less than that of the single truncates cone one, and jet tip velocity increases by 18% than that produced by shaped

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