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基于谐振效应的电子起爆装置电磁敏感性分析方法

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摘要：

针对战场环境中电子起爆装置易受电磁干扰影响的特点，研究了电子起爆装置的电磁敏感特性，提出了基于谐振效应的全波物理建模和本征特性仿真相结合的分析方法，使用该方法计算了某型地雷非触发引信的电磁敏感性，并从仿真和实验两个方面进行了验证。结果表明，该方法计算精度高，稳定性好，对电子起爆装置电磁兼容性设计具有重要参考价值。

关键词： 电磁敏感性 电子起爆装置 谐振效应 电磁兼容

Electromagnetic susceptibility analysis method of electro-explosive devices based on resonance effect

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Abstract:

Electro-explosive device (EED) is easily influenced by electromagnetic interference in war-field. To study the electromagnetic susceptibility of EED, the method of full-wave physical modeling and intrinsic characteristic simulation based on resonance effect is presented. The electromagnetic sensibility (EMS) of certain mine non-contact fuse is analyzed as an example. Both simulation and test are done to validate the correction of the EMS analysis method. The results demonstrate the precision and effectiveness of the proposed method which is of great value for reference to electromagnetic compatibility design of EED.

Keywords: electromagnetic susceptibility electro-explosive device (EED) resonance effect electromagnetic compatibility

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