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## 破片穿孔毁伤对圆抛物面天线电性能影响的仿真计

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Title: Simulation and Calculation of Influence of Fragment Damage to Performance of Antenna with Paraboloid

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关键词: [天线毁伤](#); [破片](#); [物理光学法](#); [矩量法](#); [远场辐射方向图](#)

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摘要: 研究圆抛物面天线在大量破片穿孔毁伤条件下的远场辐射特性规律,利用高频电磁场分析模块FEKO软件,基于表面电流积分的物理光学法和矩量法混合使用,对圆抛物面天线的远场辐射特性进行了建模与分析,比较了反射面完好时和不同密度破片对反射面穿孔毁伤后的电性能变化。着重研究了天线反射面在不同密度的破片毁伤后远场辐射特性随破片密度的变化规律,结果表明:反射面天线增益在破片穿孔密度一定大小范围内不变,但随穿孔密度的增大而逐渐减小。

Abstract: The far field radiation characteristics of circle parabolic reflector subjected to fragments perforated damage was studied. The far field radiation characteristics of circle parabolic reflector was modeled and analyzed using the moment method and the method of physical optics based on surface current integration in the analysis model FEKO of electromagnetic field of high frequency characteristics. The comparison that the electrical performance changes when reflector is perfect and reflector is damaged by fragments was made. The law that far field radiation characteristics changes with the different density of fragments was studied when antenna reflector is damaged by fragments. The results show that the gain of the circle parabolic reflector is invariable in the range of certain density of fragments but it decreases with increase of fragment density.

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