西安电子科技大学学报 2008 35 (1): 140-143 ISSN: 1001-2400 CN: 61-1076/TN

飞行器目标的双站散射特性研究

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收稿日期 修回日期 网络版发布日期 2008-1-19 接受日期

摘要 为研究飞行器目标双、多站电磁散射特性和隐身、反隐身原理，通过固定双站角、旋转目标的方法对不同双站角下目标的雷达散射截面进行了测试分析，避免了多次定标，效率较高．通过比较不同双站角下的飞行器目标的雷达散射截面，发现了其双站电磁散射的对称性、相似性和弱耦合性3大主要特性，并得出如下结论:单站隐身技术通过改变电磁散射能量的空间分布，将强散射波峰控制在重点探测方向之外实现隐身，而双站雷达主要通过截获重点探测方位(相对单站)之外的强散射波峰实现反隐身要求．因此判定目标的双站隐身特性需结合主要威胁双站角和整机所有强散射波峰进行．

关键词 飞行器 隐身 电磁散射

分类号 V218

Research on the bistatic RCS characteristic of aircraft

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Abstract

The RCS of aircraft at different bistatic radar angles is gained to investigate the electromagnetism scattering characteristic of the multi-station and bistatic radar.This method uses an efficient method for revolving the target and fixing bistatic radar angle to avoid multiple picketage. Three bistatic RCS characteristics, which are symmetry, similarity and weak coupling, are found by comparing the target RCS with different bistatic radar angles. Some results are obtained as follows: stealth technology of monostatic radar could realize the stealth purpose by changing the electromagnetism scattering space distribution and making the intense wave crest go out of the important detect region, while techology of bistatic radar that intercepts the intense wave crest which is out of the important detect region is mainly used to meet the anti-stealth requirement.Both of the main threatening bistatic radar angles and the entire intense wave crest should be considered to estimate the target bistatic stealth characteristic.

Key words aircraft stealth electromagnetic scattering

DOI:

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