[1]高飞,刘伟,焦淑红.调频连续波SAR抗欺骗干扰研究[J].弹箭与制导学报,2011,5:174-176.

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调频连续波SAR抗欺骗干扰研究(PDF)

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Title: The Research on Anti deception Jamming for Frequency Modulated Continuous Wave SAR

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关键词: 调频连续波; 合成孔径雷达; 抗干扰; 随机初相; 限幅

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摘要: 针对合成孔径雷达无法抑制欺骗干扰的问题，从波形设计角度出发，提出基于调频连续波体制的随机初相与限幅相结合的成像雷达抗干扰方法。该方法在调频连续波中加入随机变化的初始相位，通过发射诱骗信号截获干扰脉冲并对干扰信号进行方位压缩，限幅、逆滤波后用真实滤波函数进行匹配滤波，最后按照传统调频连续波SAR成像方法进行成像。仿真结果证明该方法可将干信比提高到30dB。同直接匹配滤波随机初相抗干扰相比，抗干扰性能得到提高。

Abstract: To suppress the deception jamming for synthetic aperture radar (SAR), the anti jamming method of random initial phase combined with amplitude limitation for imaging radar was proposed from the perspective of waveform design based on frequency modulated continuous wave (FMCW) system. The method is, first, add a random initial phase into transmitting signals and induced signals are transmitted to intercept the interfering signal which is used as a matched filtering function for azimuth compression. After amplitude limitation and inverse matched filtering, the real matched filter is used and the normal FMCW SAR imaging process can be implemented. The simulation results prove that the jamming signal ratio (J/S) can be raised to 30dB by this method. Compared with the method of random initial phase with direct matched filtering, anti jamming performance is improved.

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