An Improved Sub-Nyquist Sampling Jamming Method for Deceiving Inverse Synthetic Aperture Radar

Authors : Yanli Qi, Ning Lv, Jing Li

Abstract : Sub-Nyquist sampling jamming method (SNSJ) is a well known deception jamming method for inverse synthetic aperture radar (ISAR). However, the anti-decoy of the SNSJ method performs easier since the amplitude of the false-target images are weaker than the real-target image; the false-target images always lag behind the real-target image, and all targets are located in the same cross-range. In order to overcome the drawbacks mentioned above, a simple modulation based on SNSJ (M-SNSJ) is presented in this paper. The method first uses amplitude modulation factor to make the amplitude of the false-target images consistent with the real-target image, then uses the down-range modulation factor and cross-range modulation factor to make the false-target images move freely in down-range and cross-range, respectively, thus the capacity of deception is improved. Finally, the simulation results on the six available combinations of three modulation factors are given to illustrate our conclusion.