

عنوان مقاله:

Anti-spoofing by smart acquisition in cold-start with multiple hypothesis using wavelet transform in a software GPS receiver

محل انتشار:

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خلاصه مقاله:

The spoofing subject is becoming ever increasingly more severe. In addition to the flow of technology, the availability of software-defined radio platforms has increased. Usually, detecting the spoofing is performed by introducing the features that are difficult for the deceiver to counterfeit. Spoofing and countering can be performed in different parts of a GPS receiver. In recent years, less attention has been paid to defense at cold-start. This research presents that the spoofing attack can be diminished during the initial start-up process with a very short effective time. This low-cost method introduces a new decision rule based on a multiple statistical hypothesis test to identify fake peaks in correlation output of acquisition and extract the authentic peaks utilizing the wavelet transform or peak removal process. The main distinction of this method with previous works is investigating different amplitude ratios of spoofing signal to authentic. Simulation results on ۱۰ data sets show that the probability of correct detection and mitigation is more than ۹۰%.

کلمات کلیدی:

GPS, Cold-Start, Acquisition, Wavelet Transform, Hypothesis, Correlation

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