

SPACE COMMUNICATIONS AND NAVIGATION SYMPOSIUM (B2)
Advanced Satellite Services (3)

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SPECTRUM DETECTION BASED ON PARTICLE SWARM SVM

Abstract

Spectrum sensing technology can sense the idle spectrum, the signal characteristic, and the frequency band of communication satellite, thus to obtain spectrum occupations. The signal obtained by satellite reconnaissance is generally incomplete, as security features of satellite surveillance signal. This paper presents a method for detecting particle spectrum optimization based on SVM to detect incomplete signal and estimate channel. Nonlinear threshold instead of the traditional linear threshold, generating different false alarm probability of training data by non-linear threshold, calling different nonlinear threshold according to the specific requirements of spectrum sensing. In the primary user need not know a prior information signal spectrum to detect a case, in a low signal to noise ratio and a low sampling rate.