



CREDIBILITY EVALUATION FOR BLIND PROCESSING RESULTS OF BPSK SIGNALS BY USING PHASE SPECTRAL ENTROPY

Wang Shuwang, Hu Guobing

School of Electronic Information Engineering

Nanjing College of Information Technology, Nanjing, Jiangsu 210023, China

Emails: wangsw@njcit.cn, hugb@njcit.cn

Submitted: March 14, 2016

Accepted: Oct.16, 2016

Published: Dec.1, 2016

Abstract- A credibility test method based on the features of frequency domain entropy of a phase is proposed to evaluate the blind processing results of a BPSK signal. Initially, a reference signal was constructed depending on the certain identified modulation results. By analyzing the differences of the phase of the correlation series between the observed signal and the reference signal, a reliability test problem for the BPSK signal is performed by calculating the phase spectrum entropy and comparing it with a certain threshold. Simulation results show that the proposed method can be used to verify the reliability of the blind processing results of a BPSK signal at a low signal-to-noise ratio and without a priori knowledge of the signal parameters.

Index terms: blind signal processing; credibility test; phase spectrum entropy.