Identification of digital modulation based on information entropy

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May 26, 2022

Abstract

The classification of modulated signals under a low signal-to-noise ratio (SNR) environment has become a hot topic due to the complexity of the communication environment. Many relevant publications deal with signal recognition with stable SNR but are not applicable in time-varying SNR scenarios. To solve this problem, we propose a new method for determining the types of modulation based on entropy analysis. The proposed algorithm first extracts characteristics using different types of entropy and can separate the types of phase modulation (PSK): BPSK, QPSK, 8PSK, 16PSK, 32PSK, and 64PSK. In comparison with traditional feature extraction methods, the proposed algorithm increases the efficiency of signal classification. The results show that the algorithm can achieve better signal classification effects, even if SNR reaches -4 dB.

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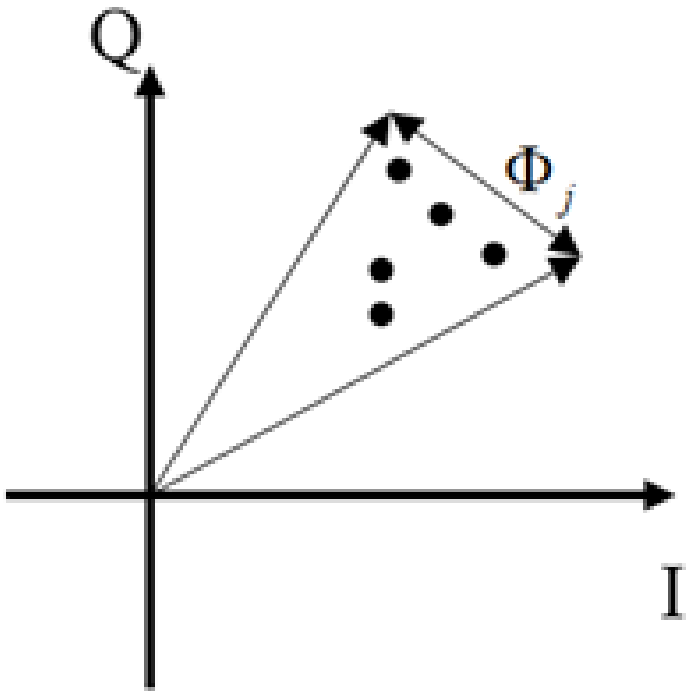
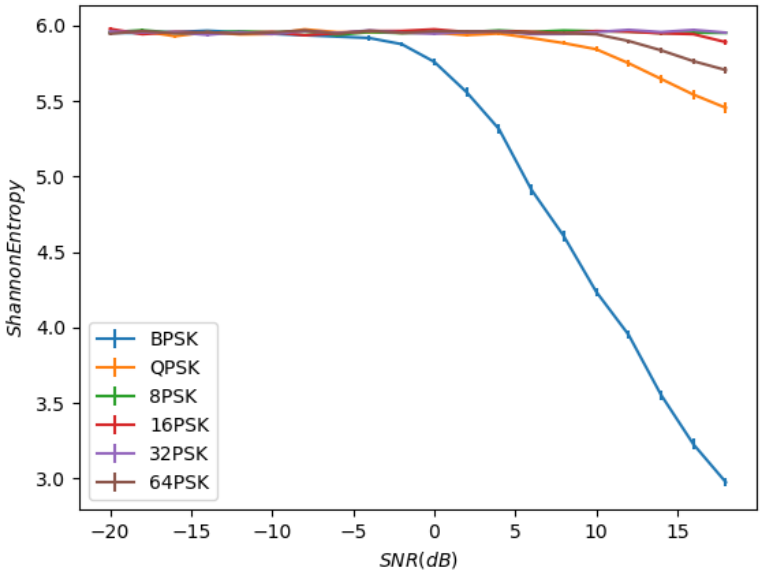
`Identification of digital modulation based on information entropy1.pdf` available at https://authorea.com/users/485033/articles/570603-identification-of-digital-modulation-based-on-information-entropy





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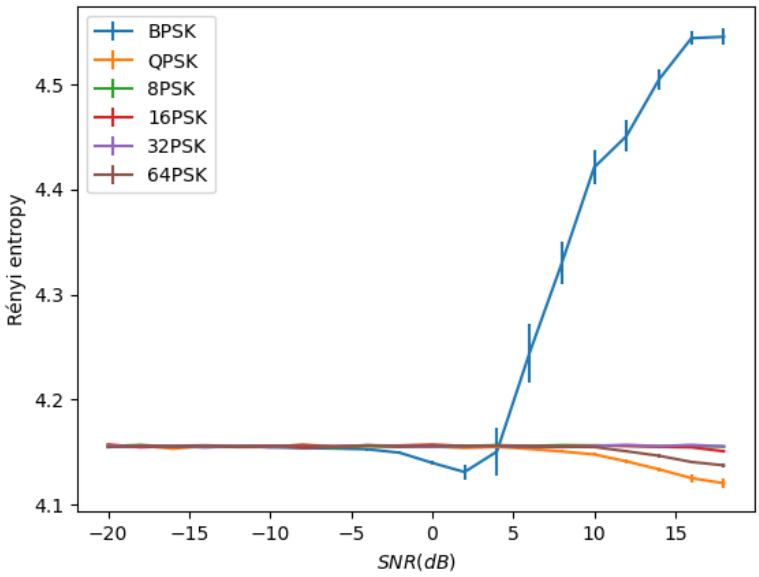

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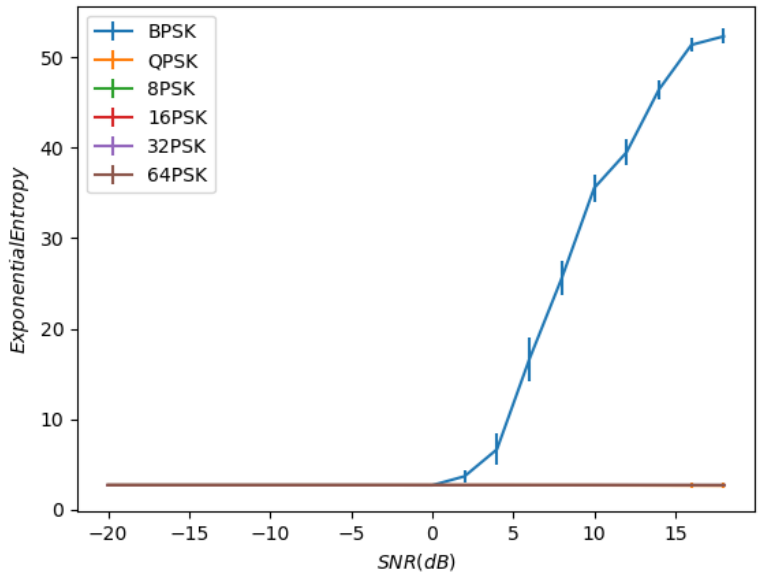

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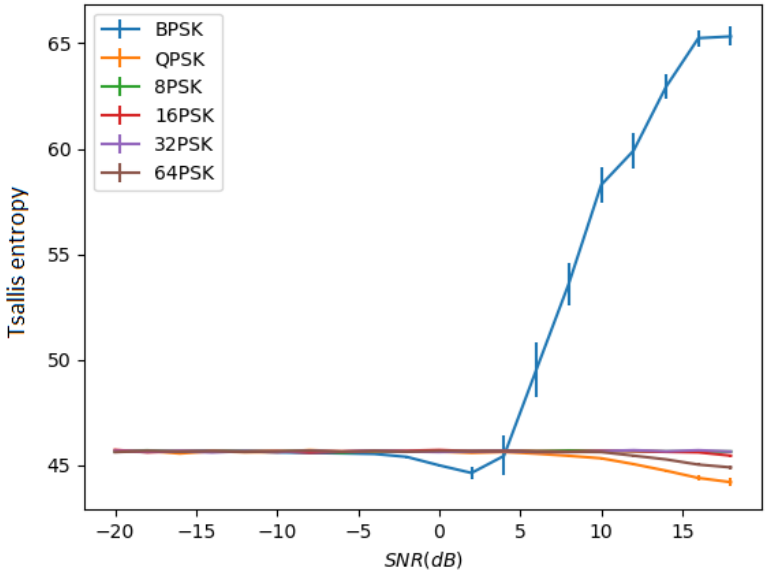

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