Validation of Beta Distribution for Spectrum Usage using Kolmogorov-Smirnov Test

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Abstract

The arrival and departure of licensed users in the licensed band is a random process. So the channel availability for secondary use or spectrum usage modeling is not an easy task in such scenario. The spectrum measurements for a longer period are useful to characterize and model the spectrum usage. The spectrum usage modeling is the important area of research to realize the cognitive radio. It helps in spectrum sensing, the key function of the cognitive radio. The existing research literature has shown the Beta distribution in the modeling the spectrum usage of the licensed user in a licensed band. This article has validated the Beta distribution channel usage model using the real-time measurements that was conducted in the frequency band 700 to 2746.6 MHz at Pune, India. In this paper, Kolmogorov-Smirnov (K-S) Test is used for Beta distribution validation.

References


Index Terms

Computer Science

Circuits and Systems

Keywords

Cognitive Radio, Spectrum usage, Beta distribution, Kolmogorov-Smirnov Test