

## Aliasing Free and Additive Error in Spectra for Alpha Stable Signals

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**Abstract :** This work focuses on the symmetric alpha stable process with continuous time frequently used in modeling the signal with indefinitely growing variance, often observed with an unknown additive error. The objective of this paper is to estimate this error from discrete observations of the signal. For that, we propose a method based on the smoothing of the observations via Jackson polynomial kernel and taking into account the width of the interval where the spectral density is non-zero. This technique allows avoiding the "Aliasing phenomenon" encountered when the estimation is made from the discrete observations of a process with continuous time. We have studied the convergence rate of the estimator and have shown that the convergence rate improves in the case where the spectral density is zero at the origin. Thus, we set up an estimator of the additive error that can be subtracted for approaching the original signal without error.

**Keywords :** spectral density, stable processes, aliasing, non parametric

**Conference Title :** ICDCCSP 2019 : International Conference on Digital Circuits, Systems and Signal Processing

**Conference Location :** Dublin, Ireland

**Conference Dates :** November 07-08, 2019