

# Minimum Distance Inference in Unilateral Autoregressive Lattice Processes

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## ABSTRACT

In this talk we shall discuss two classes of minimum distance estimators of the underlying parameters and their robust variants in unilateral autoregressive lattice models, an asymptotically distribution free test for testing the symmetry of the error distribution and a goodness-of-fit test for fitting an error distribution, and a lack-of-fit test for the hypothesis that the given process is doubly geometric based on the least absolute deviation residuals. A simulation study that investigates some small sample properties of the proposed estimators and their robustness, and the empirical level and power of the test of a doubly geometric process at various error distributions will be also presented.

It is shown that some of the proposed estimators are more efficient than the least squares estimator at non-normal error distributions. The proposed methodology is then applied to a real data set of yields from an agricultural experiment.