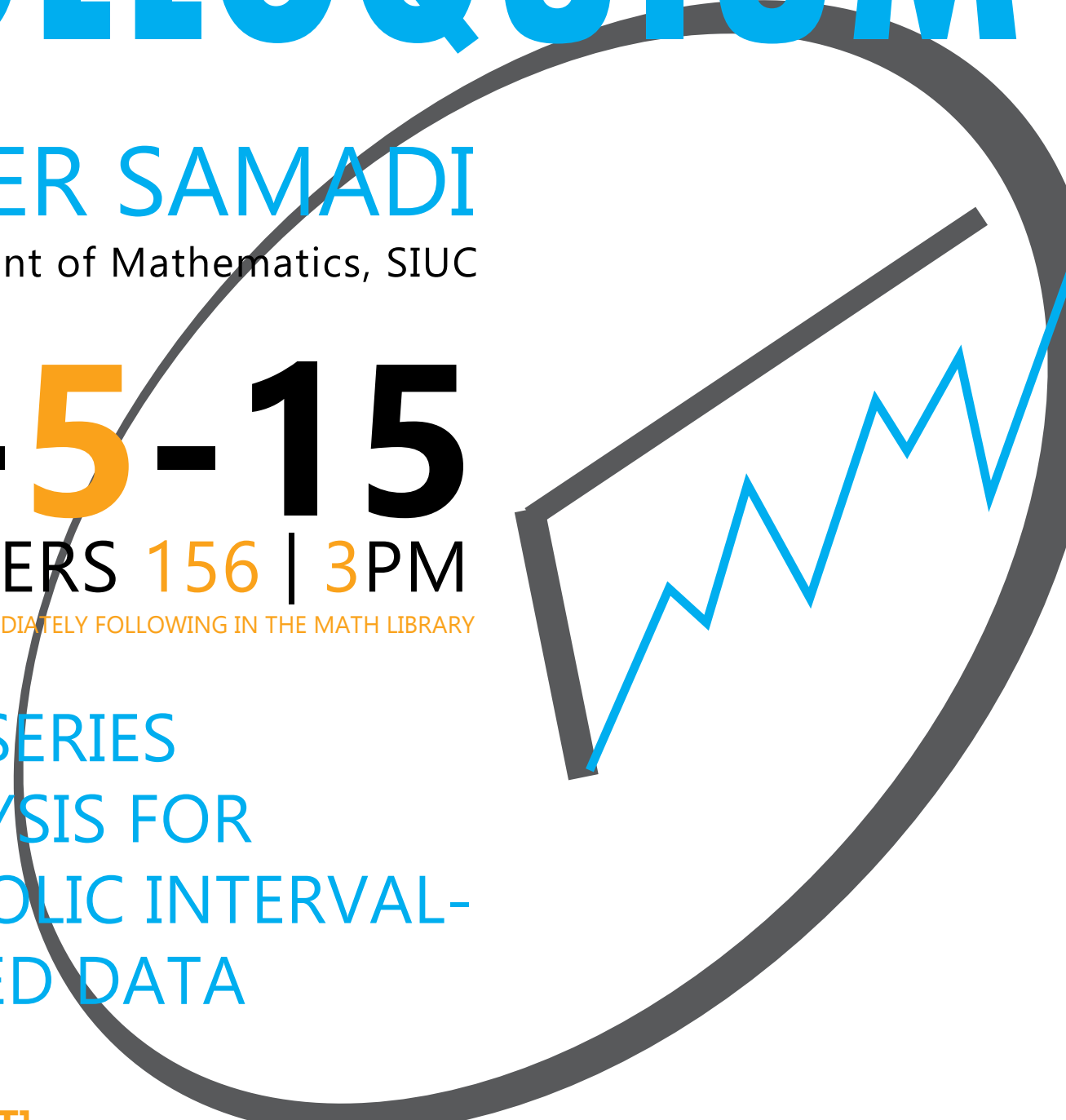


COLLOQUIUM



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2-5-15

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TIME SERIES
ANALYSIS FOR
SYMBOLIC INTERVAL-
VALUED DATA

[ABSTRACT]

Symbolic values can be lists, intervals, frequency distributions, and so on. Therefore, in comparison with standard classical data, they are more complex and can have structures (especially internal structures) that impose complications that are not evident in classical data. In general, using classical analysis approaches directly lead to inaccurate results.

As a result of dependencies in time series observations, it is more difficult to deal with symbolic interval-valued time series data and take into account their complex structure and internal variability than for standard classical time series. In the literature, the proposed procedures for analyzing interval time series data used either midpoint or radius values that are inappropriate surrogates for symbolic interval variables. We develop a theory and methodology to analyze symbolic time series data (interval data) directly. Autocorrelation and partial autocorrelation functions are formulated, maximum likelihood estimators of the parameters of symbolic autoregressive processes are provided.

Keywords: Symbolic data, time series analysis, autocorrelation and partial autocorrelation functions.