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**Discrimination and clustering for multivariate time series.** (English) Zbl 0906.62060

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Summary: Minimum discrimination information provides a useful generalization of likelihood methodology for classification and clustering of multivariate time series. Discrimination between different classes of multivariate time series that can be characterized by differing covariance or spectral structures is of importance in applications occurring in the analysis of geophysical and medical time series data. For discrimination between such multivariate series, Kullback-Leibler discrimination information and the Chernoff information measure are developed for the multivariate non-Gaussian case. Asymptotic error rates and limiting distributions are given for a generalized spectral disparity measure that includes the foregoing criteria as special cases. Applications to problems of clustering and classifying earthquakes and mining explosions are given.

**MSC:**

**62H30** Classification and discrimination; cluster analysis (statistical aspects)

**62M10** Time series, auto-correlation, regression, etc. in statistics (GARCH)

**86A15** Seismology (including tsunami modeling), earthquakes

Cited in **1** Review

Cited in **66** Documents

**Keywords:**

divergence; minimum discrimination information; robustness; spectral analysis; Kullback-Leibler discrimination information; Chernoff information measure

**Full Text:** [DOI](#)