

Goodness of fit tests for Markov random fields

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ABSTRACT

In this talk we develop a class of goodness-of-fit tests for Markov random field models for spatial data. Test statistics are formed from generalized spatial residuals which are collected over groups of non-neighboring spatial observations, called cliques. Large sample distributions of these statistics are explicitly derived for testing both simple and composite hypotheses. The distributional results are then illustrated and investigated through simulation.

[‡] Joint Work with M.S. Kaiser and D.J. Nordman