

# Some diagnostics for Markov random fields

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## **Abstract**

Developing diagnostics to check the fit of a proposed Markov random field (MRF) to data is a very important problem in spatial statistics. In this paper, the consequences of fitting a given MRF to spatial data are visualized using diagnostic plots. Various types of departures of the data from the fitted MRF model are calculated, allowing locally influential observations to be flagged using the MRF-Neighborhoods plot. Through the Model-Comparison plot and a global summary statistic, we compare competing MRF models.