Spatial modelling for mixed-state observations

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Abstract
In several application fields like daily pluviometry data modelling, or motion analysis from image sequences, observations contain two components of different nature. A first part is made with discrete values accounting for some symbolic information and a second part records a continuous (real-valued) measurement. We call such type of observations ``mixed-state observations''. This paper introduces spatial models suited for the analysis of these kinds of data. We consider multi-parameter auto-models whose local conditional distributions belong to a mixed state exponential family. Specific examples with exponential distributions are detailed, and we present some experimental results for modelling motion measurements from video sequences.

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