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Graph-based change-point test

Modeling high-dimensional time series is necessary in many fields such as neuroscience, signal processing, network evolution, text analysis, and image analysis. Such a time series may contain unknown multiple change-points. For example, the time of cell divisions can be accessed using an automatic embryo monitoring system by a time-lapse observation. When a cell divides at some time point, the distribution of pixel values in the corresponding frame will change, and hence the detection of cell divisions can be formulated as a multiple change-point problem. In this talk, we introduce a powerful change-point test in terms of the shortest Hamiltonian path (SHP).