

Inference for a change-point problem under a generalised Ornstein–Uhlenbeck setting

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Abstract Determining accurately when regime and structural changes occur in various time-series data is critical in many social and natural sciences. We develop and show further the equivalence of two consistent estimation techniques in locating the change point under the framework of a generalised version of the one-dimensional Ornstein–Uhlenbeck process. Our methods are based on the least sum of squared error and the maximum log-likelihood approaches. The case where both the existence and the location of the change point are unknown is investigated and an informational methodology is employed to address these issues. Numerical illustrations are presented to assess the methods’ performance.

Keywords Sequential analysis · Least sum of squared errors · Maximum likelihood · Consistent estimator · Existence of change point

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