

**NONPARAMETRIC BOOTSTRAP INFERENCE IN A
MULTIVARIATE SPATIAL-TEMPORAL MODEL**

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Abstract

Nonparametric bootstrap inference in a multivariate spatial-temporal procedure is proposed to verify two important assumptions namely, constant multivariate characteristics across spatial locations and constant multivariate characteristics across time points. The bootstrap normal confidence intervals and type-2 p-value for the multivariate characteristics across spatial locations/time points were constructed for the test procedures.

Results of the simulation studies indicate that the proposed test procedures are powerful and is correctly size. The test procedures for multivariate characteristics across spatial locations/time points are also robust for a wide range of data structures.

Keywords: nonparametric hypothesis testing; multivariate model; simulation