

## **A bootstrap application on the standard normal homogeneity test (snht) when there is not highly correlated reference series**

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### **Abstract**

Climate change possesses many risks for the environment and human beings. The related events such as floods or droughts should be predicted and the precautions should be taken to reduce the damage that may be caused by the extreme events. In order to conduct analyses on climate data, the quality control process should be applied to obtain reliable results. Homogeneity analysis, which is the quality control of the meteorological data, is defined as the detection of non-climatic factors. Standard Normal Homogeneity Test (SNHT) is a widely used homogeneity test applied if only there are highly correlated neighbor series. In this study, a computational method, bootstrapping is applied with SNHT if there is not highly correlated series. The simulation results show that the proposed approach has higher detection rates especially if the break is in the middle of the series.

**Keywords:** time series; homogeneity; moving block bootstrap; F-test.