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Jackknife and bootstrap with cycling blocks for the estimation of fractional parameter in  
ARFIMA model

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**Abstract:** One of most important problems concerning the ARFIMA time series model is the estimation of fractional parameter  $d$ . Various methods have been used to solve this problem, such as the log-periodogram regression of a process. In this article we propose two jackknife and bootstrap methods, which aid in the estimation of fractional parameter  $d$ . These methods involve non-overlapping blocks and moving blocks with random starting point and length. We have conducted several simulations and the results show that the estimations obtained are very close to the real parameter value.

**Key Words:** Jackknife, bootstrap, fractionally parameter, ARFIMA model, moving blocks, non overlapping blocks

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