



Fractional Low-Order Joint Moments in the Estimation of Fractional Motions

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Fractional motions arise naturally from the integration of fractional noises, signals that appear in a variety of geophysical processes. When the marginal limiting probability distributions of these processes are Gaussian, the scaling behaviour of integer moments, be they marginal or joint - such as linear autocorrelation - can be used to parameterize the process. When, however, those moments do not converge, due to the heavy tails of the distributions, fractional low-order moments offer an attractive alternative. An application thereof to hydrometeorological data is presented herein.