



# Power of Change-Point Tests for Long-Range Dependent Data

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We investigate the power of the CUSUM test and the Wilcoxon change-point test for a shift in the mean of a process with long-range dependent noise. We derive analytical formulas for the power of these tests under local alternatives. These results enable us to calculate the asymptotic relative efficiency (ARE) of the CUSUM test and the Wilcoxon change point test. We obtain the surprising result that for Gaussian data, the ARE of these two tests equals 1, in contrast to the case of i.i.d. noise when the ARE is known to be  $3/\pi$ .

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