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Detrended fluctuation analysis to monitor main and aftershocks in the California earthquake interevents

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We study temporal correlations of California earthquakes interevents each over a period of recent 40 years. To detect long-term correlations behavior, we apply detrended fluctuation analysis (DFA) that can systematically detect and overcome nonstationarities in the data at all time scales. When we plot the fluctuation functions F(s) versus time scale s obtained from DFA for the interevents fluctuations, we observed a crossover timescales belonging to the main and after shocks. We find interevents are long range correlated with Hurst exponent H=0.70. Also, we show the behavior of the aftershocks effects versa magnitude.