

# **Wavelet and Multitaper spectral analysis of cosmic ray muon and neutron data**

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Many times series in geophysics may contain dominant periodic signals. These signals can vary in both amplitude and frequency over long periods of time. The wavelet analysis is a powerful toll to spectral analyses of time series, because this analysis decomposes a time series into time/frequency space simultaneously. One gets information on both the amplitude of the interest periodic signal within the series, and how this amplitude varies with time. In this work we will make a spectral wavelet and multitaper analysis of muon and neutron cosmic ray and compare these two kinds of spectral analysis and particles with each other, and will find the mainly periodicities in these time series.