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Analysis of radon time series by means of continuous wavelet transform

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Abstract

The abnormal radon exhalation from the earth crust, as a precursory phenomenon related to seismic events, is an important research topic [1, 2]. The radon exhalation is related to the variability of local meteorological parameters. In the present study, a continuous RTM 2200 / SARAD monitor was used to measure the time series of radon concentration in the soil and meteorological parameters. These measurements were made in 4 wells at EMHU-PUCP for two weeks with 15-minute cycles. The nature of these temporal variations was characterized by means of continuous wavelet transformation (CWT) [3], performing a spectral analysis in the time-frequency domain. Also, a correlation analysis was performed between the different time series. An analysis is made of the potential influence of ambient temperature on radon concentration measurements.

Keywords: Time series; wavelet transform; Radon.

References:

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