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Application of statistical analysis for Soil gas radon concentration for earthquake studies

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The analysis of soil gas radon concentration at Amritsar (Punjab), Kangra and Chamba Valleys of NW Himalayas India is carried out to study the correlation of radon anomalies in relation to seismic activities in the region. The radon concentrations are correlated with temperature, pressure, rainfall and wind speed. A correction for these correlations to obtain a corrected radon concentration that shows less variability and may correlate better with earthquake events has been applied using equation of the multiple regressions. Empirical equations between earthquake magnitude, epicentral distance and precursor time have been examined and respective constants were determined. The epicentral distance, precursory time and magnitude of an upcoming earth¬quake from observed area under the peak of the radon anomaly is calculated using empirical equations. The error between the recorded and calculated epicentral distance, precursory time and magnitude magnitude is also calculated.