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Seismicity of Doon Valley, North West Himalaya, India: A Fractal Approach

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Doon valley experienced severe tremors of Kangra earthquake (1905), the Uttarkashi earthquake (1991) and Chamoli earthquake (1999). The area falls in a tectonically active zone of the western sub-Himalaya with a complex geotectonic set up. In the present study, fractal analysis is carried out to understand the seismicity of the region using spatial distribution of earthquakes of the region and LANDSAT imageries of active lineament and drainage pattern of the area.

The fractal dimension values for the lineament and drainage systems of the area are estimated as 1.63 and 1.82 respectively, which are close to the fractal Dimension (D2=1.73) of the epicentral distribution of earthquakes of the area. The analysis is described in terms of seismicity (b=1.19) for a tectonically active region.