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Soil-gas radon/helium surveys in some neotecto areas of NW Himalayan foothills, India

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Abstract. The present research is aimed at accessing the relations between variation in the soil gases radon (^{222}Rn) and helium (^{4}He recently developed fissures and other neotectonic features in Nurp Nadha areas of the NW Himalayas, India. Two soil-gas surveys we conducted on/near known faults to reconfirm their position using s technique and to check their present activity. During these surveys gas samples were collected along traverses crossing the observed structures. The data analysis reveals that the concentrations of ra helium along the Dehar lineament and the longitudinal profile (Prof are very high compared to any other thrust/lineament of the Nurpu The Nadha area shows high values of radon and helium concentra along/near the Himalayan Frontal Fault (HFF) as compared to the a areas. This indicates the presence of some buried fault/fault zone parallel to the HFF, not exposed to the surface and not delineated satellite data but is geochemically active and might be tectonically too. Hence, soil helium and radon gas patterns have been combine morphological and geological observations to supply useful constra deformation of tectonic environments.

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