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Pre-Seismic Signals Recorded By The Italian RDF Network Before The Occurrence Of Some Earthquakes In Northern Italy

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Abstract

The causes that generate an earthquake can be of various kinds and, generally, there is talk of tectonic earthquakes. This type of earthquakes, unlike sudden events, such as collapses, explosions or meteoritic impacts, follow a seismic cyclicity. During the intermediate and presismic phase they are often associated with tectonic stress tension precursors of physical and chemical nature. In this study one of these aspects is analyzed: the electromagnetic interaction generated by the deformation of minerals subjected to stress in tectonically active areas. The recognition system, at the moment in the experimental phase, is the Radio Direction Finding (RDF) Network: a monitoring system that intercepts the frequencies and identifies its direction. The use of several monitoring stations makes it possible to make triangulation and locate the area of the potential epicenter already five days before the main shock. In this study two recent earthquakes occurred in Italy, in Milan and Verona, where the RDF system has proved to be an effective method of monitoring the crustal tensions in the presismic phase, thanks to the electromagnetic monitoring network equipped with RDF technology from the Radio Emissions Project team.

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Earthquake prediction, Radio Direction Finding, Radio anomalies, seismic precursors

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