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Earthquake prediction activities and introduction of earthquake precursor test site in Iran.

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The Iranian plateau has long been known as one of the most seismically active areas of the world and it frequently suffers destructive and catastrophic earthquakes that cause heavy loss of human life and widespread damage.

The Alborz region in the central part of Iran is an active, EW trending mountain belt of 100 km wide and 600 km long. The Alborz range is bounded by the Talesh Mountains to the west and the Kopet Dagh Mountains to the east and consists of several sedimentary and volcanic layers of Cambrian to Eocene ages that were deformed during the late Cenozoic collision.

Several active faults affect the Central Alborz. The main active faults are the North Tehran and Mosha faults and their westward continuation, the Taleghan fault. The Mosha fault is one of the major active faults in Central Alborz as shown by its strong historical seismicity and its clear morphological signature. Situated at the vicinity of Tehran city, this 150 km long N100˚ E trending fault represents an important potential seismic source that threatens the Iranian metropolis.

The earthquake monitoring and for the possible future prediction purposes a test-site has been selected to be established in the Alborz mountain region where the proximity to the capital of Iran with high population density; low frequency but high magnitude earthquake occurrence and the proximity to active fault with historical earthquake events have been considered as the main criteria for this selection. It is important to mention that within the test-site also exist hot springs, and deep water wells which could be used for physico-chemical and Radon gas analysis for earthquake precursor's studies. It is important to mention that the selection of methodology is based on IASPEI evaluation report on the most important precursors.

In this presentation after a review of present activities (e.g. recent magnetic measurement and, application of IIEPT&MG RAS methodology for identification of seismogenic nodes for earthquakes of M $\geq$ 6.0 in the Alborz region) conducted in Iran concerning the earthquake precursors, the related test site will be introduced where within the site the ongoing establishment of i) local dense seismic network consisting of 50 stations ii) GPS network consisting of 8 instrument with 70 stations iii) magnetic network with 4 instruments iv) Radon gas and physico-chemical study on the springs and deep water wells will be explored.