

SIGNIFICANCE OF ELECTRICAL CONDUCTIVITY FOR IDENTIFICATION OF SEISMIC HAZARDOUS ZONES

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Identification of seismic hazardous zones of a country or a region is important for social, engineering and mitigation purposes. This is presently being carried out mainly based on the seismicity levels, recurrence period of seismic events, tectonics of a region etc. Reactivation of major geological faults in association with the presence of fluids is believed to be an important factor that can cause earthquakes as revealed in recent studies carried out in various epicentral regions - Latur earthquake, South India, Jabalpur earthquake, Central India, northern Miyagi prefecture region, Japan, Loma Prieto region, USA etc. It is known that active faults and fluid rich zones are the source for high conductivity. Application of magnetotellurics, one of the geophysical exploration techniques in mapping the electrical conductivity, in these earthquake epicentral regions has revealed the presence of high conducting zones. Discussing these results, the present study argues that identification of anomalously high conducting zone at shallow crustal depths in aseismic regions can be considered as a valuable parameter for demarcation of seismic hazardous zones.