



## **Earthquake consequences & micro-seismicity of Kashmir valley. An estimation of future risks& safety**

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### **ABSTRACT**

Kashmir valley, situated in the western extent of NW Himalaya holds an infrastructure of 7 million people. The region has always been in concern about the consequences of earthquakes and by the conclusions that has been brought down by various earthquake scientists. However, the earthquake data suggests that the valley has witnessed only upto the maximum of 5.5 magnitude earthquake from the year 1900 onwards inside its periphery. Apart from 7.6, 2005 Muzaffarabad earthquake whose epicenter was away from Kashmir basin, it has witnessed only three greater magnitudes of 5-5.5 inside its boundary from last 100 years. The effort was made to delineate the faults in the region by the use of hyper spectral remote sensing followed by the field validation. The total of 17 faults have been delineated inside the Kashmir basin. The mechanics of faults and their topographic orientations suggest that few of those faults have a capability of holding a greater magnitude earthquake. An attempt was made to analyze the region through its micro seismicity level by studying the densities and magnitudes of previously occurred earthquakes as well as the densities and length of faults in the Kashmir basin. The study suggests that the western side of the valley indicates the maximum severity of damage than the central and eastern side. The work has also found that the most of the civic infrastructure indicates weak behavior to resist against the earthquake forces. Being as the Himalayan valley and surrounded by the greater thrust systems by all sides, the study implies towards the urgent need of cooperation between all the sectors in the region to avoid the greater damage from the earthquakes shocks.

***Keywords: Kashmir valley, Earthquakes, Faults, Micro-seismicity, Remote sensing.***