Seismic hazard analysis of Dasu Region using latest WAPDA Micor-Seismic Monitoring System Network data

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Abstract

Seismic Hazard Analysis has been carried out for most of the areas of Pakistan in detail with respect to the seismicity for major cities, but still there are a few small cities that are yet to be studied in the Northern Pakistan among which Dasu is a town surrounded by many smaller villages within the tectonically active valley. Dasu is located along Karakorum Highway and Indus River that leads to Gilgit and further to the China border. Dasu is also an area of interest nowadays because of the ongoing construction of Power generation Projects such as Dasu Hydro-Power Project and Pattan Power station along-with smaller projects like Keyal-khwar Power Project of WAPDA.

The Dasu Hydropower Project is located on the Indus River at about 8 km upstream of Dasu bridge, near the small town of Dasu, with installed capacity of 4300MW after completion. In 2008, WAPDA carried out a feasibility study of Dasu Hydropower Project, which included a general study of the Dasu area and the tectonic features. The results were based on all the available data from local and international broadband seismic networks. However, with the setup of WAPDA's own Micro-seismic Monitoring System (MSMS) during 2009, the data quality and state of the art Software ANTELOPE, has greatly improved and can be used to generate a new set of results for the Dasu area. This paper is an attempt to comprehensively cover all the details required to further enhance our knowledge of the areas seismicity and hazards associated with Earthquakes.