

Effect of Near Surface Geology on the Recorded Ground Motion of the Nepal Earthquake in Kumaon Himalaya

*SOHAN LAL¹, Anand Joshi¹, M.L. Sharma¹

1. Indian Institute of Technology Roorkee

An earthquake has been devastated the Nepal on 25 April 2015. The earthquake experienced the low frequency amplification. The subsurface structure alters the seismic wave through which they propagate and can amplify or de-amplify the amplitude of the coming wave from the source for the frequency ranges. The Nepal earthquake was been recorded at the Kumaon Himalaya region at the western side from the epicenter. The present paper highlights the effect of local geology on the recorded ground motion and calculation the shallow subsurface velocity model using the joint fit of the surface wave dispersion curve and HVSR ratio. The theoretical transfer function generated which satisfy both the dispersion curve and the HVSR ratio is directly convolve with the hard rock simulated time series to calculate the surface simulation. The simulation of the Nepal earthquake was done using the semi- empirical technique.

Keywords: Site effect, Strong ground motion, Simulation

