

# **ALERT G-Gap: Assessment of Large Earthquakes and Tsunamis in the Guerrero Gap for Disaster Prevention**

**Special Session – 2015 UGM Meeting**

**Conveners:** Víctor M. Cruz-Atienza and Yoshihiro Ito

The Pacific coast of Mexico is a region with a high risk of disasters due to the likely occurrence of megathrust earthquakes and tsunamis in the near future. In particular, the Guerrero seismic gap represents one of the largest hazards in central Mexico requiring urgent actions to mitigate the associated risk through the implementation of both, early warning systems based on quantitative (and physics-based) hazard estimates, and consistent prevention policies including outreach and education. In this multidisciplinary session, we welcome contributions aimed at geophysical studies to improve our understanding of the structure and seismotectonic cycling of subduction zones (e.g., plate interface geometry in the seismogenic zone, slow slip transients, interseismic strain accumulation, plate interface coupling, seismicity, tectonic tremors, paleoseismology; elastic, rheological and frictional properties). We especially encourage studies based on ocean bottom instrumentation and/or focused on the Guerrero seismic gap. Research bringing such kind of knowledge into plausible physics-based earthquake and tsunami models by means of computational methods (from the source process to the wave propagation) for the assessment of strong ground motions and inundation areas are also welcome. We finally call for contributions addressing disaster prevention plans that integrate, for instance, quantitative hazard estimates such as those mentioned above. These may include tsunami early warning systems, social science approaches, outreach, education and public policies, all of them aimed at risk mitigation associated to future megathrust earthquakes and tsunamis in the Pacific coast of Mexico. This session integrates quantitative seismology into disaster prevention sciences to discuss the measures that still are necessary to mitigate future disasters in the region, and to promote sustainable social development that protects the lives and property of Mexican citizens.