



Preliminary Results of EEWS Parameters for SW Iberia

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SW Iberia is an area where potential large and damaging earthquakes may occur such as the 1755 (Lisbon $M_{max}=X$), 1969 (S. Vicente Cape $M_s=8.1$) or 1964 (Gulf of Cádiz $M_s=6.5$) shocks. We have estimated the peak displacement (P_d) and mean period (τ_c) for a rapid estimation of the potential damage for earthquakes occurring in this region (ALERT-ES project), from the first seconds of the beginning of P-waves. This estimation is carried out by the correlation of these parameters with the magnitude and the peak ground velocity (PGV) of recorded shocks. The database is formed by earthquakes with epicentres at S. Vicente Cape and Gulf of Cadiz regions, occurred on the period 2006-2011 with magnitude larger than 3.8 and recorded at regional distances (less than 500 km) at real time broad-band seismic stations. We have studied different lengths of time-windows (2 to 20s) and applied different filters. Due to the off-shore foci occurrence and the bad azimuthal coverage, we have corrected the P_d parameter by the radiation pattern obtained from focal mechanisms of the largest earthquakes of this region. We have normalized the P_d value to a reference distance (200 km) and after that we have obtained empirical correlation laws for P_d and τ_c versus magnitude. We have also obtained an empirical correlation between P_d parameter and the PGV estimated over the total seismogram. The PGV could be correlated to the earthquakes damages through the Modified Mercalli Intensity (IMM). Applying the scaling laws obtained (P_d and PGV), we have estimated the theoretical intensity maps for the 2007 and 2009 earthquakes occurred in this area.