



Statistical distribution of seismic event occurrences along five years at the Guerrero Pacific coast, Mexico.

E. L. Flores-Marquez (1), J. Márquez C. (1), C. Valdes (1), C. Jimenez (1), F. Angulo (2).

(1) Instituto de Geofísica, Universidad Nacional Autónoma de México, Circuito Institutos S/N, México D.F. México. (leticia@geofisica.unam.mx), (2) Departamento de Física, Escuela Superior de Física y Matemáticas, Instituto Politécnico Nacional, Edif. 9, U.P. Zacatenco, 07738, México D.F., México.

The temporal statistical distribution for average recurrence time is introduced for earthquakes occurred from 1990 to 1995, at a zone of the Mexican Pacific coast, as well as their distribution in magnitude. The study of EQ magnitude sequences cannot be done by conventional methods and statistics, because it should include rare or extreme events, involving few data. This study requires special and specific methods such as the non-homogeneous Poisson process or the extreme value theory. A general methodology for analyzing these types of processes is proposed in this work to evaluate the time-dependence EQ occurrence. Two steps were followed: first, a Weibull analysis is performed on the repose-time between successive EQs and second the EQ occurrence are analyzed using a non-homogeneous Poisson process with generalized Pareto distribution as is magnitude function.