Earthquake activity in Dominican Republic

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[1] none

The author was dispatched to Dominican Republic for anti-earthquake, JICA senior volunteer, for two years from April of 2002. In Dominican Republic the seismic observation began at the capital city Santo Domingo by the aid of Fordham University (New York) after a large earthquake (M 8.1) on August 4. There are a few informations of earthquakes in this country. The observations for watching induced earthquakes accompanied with reserving dams by the Texas University for five years from 1979 to 1984, and the hypocenters are determined by using P wave arrival times (Matsumoto and Terashima, 1984) are the only comprehensive ones in this country even now.

Seismic catalogues, files and data of hypocenters have been collected thoroughly to amount 25. Chronological presentation, frequency distribution of magnitude, epicenter map, depth distribution, and time-space distribution of earthquakes are drawn for each file of hypocenters. And hypocenters are re-determined using travel-time data of ISS and BCIS (265 events), and data of ISC is also added for analyses of earthquake mechanism by using of initial motion data (250 events).

Another old activity to this earthquake can not be found for five hundred years at least since landing by Columbus. There occurred an earthquake of M7.9 in the side of Puerto Rico on 1943, and the aftershock areas are not overlapped. It might be thought that the both earthquakes of 1943 and 1946 occurred as linked, rather than as an accident. On September 22, 2003, an Ms 6.5 earthquake occurred at Puerto Plata in the north coast, accompanied with the earthquake mechanism (CMT by USGS) of the southwestern falling along a vertical plane of nearly NW-SE, in contradiction to the strike-slip motion in the boundary region of the plates. By examining various sections of depth distribution and epicenter distribution divided with depth range, a triangular shape of active zone with two inclined seismic zones are observable down to a depth of about 100 km under the eastern Hispaniola, the first one inclined southward from Puerto Rico Trench and the second northward from Muertos Trough.