



Stations Correction and Earthquake hypocenter relocation in the Kalabsha area, Aswan, Egypt

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343 earthquakes recorded by more than 7 stations from the Aswan seismic network in the Kalabsha area, are relocated and the seismic stations correction for P-wave are estimated using joint hypocenter determination method. Seven stations AHD, SKD, NMR, GMR, KSR, GRW, and KRL have minus signs in station P-wave travel time corrections and their values - 0.009, -0.178, -0.070, -0.027, -0.344, -0.123, and -0.067. It is possible to assume that the underground structure in this area has a particular characteristic of high velocity structure and other stations WKL, WAL, GAL, KUR, MAN and NAL have positive sign and their values 0.038, 0.158, 0.065, 0.219, 0.197 and 0.057 respectively. It is possible to assume that underground structure in this area has particular characteristic of low velocity structure. The hypocenter location determined by the joint hypocenter determination method is more precise than those determined by other routine work program. The method simultaneously solves for earthquake location and station corrections. The station corrections reflect not only different crustal condition in the vicinity of the stations, but also the difference between actual and model seismic velocities along each of the earthquake - station ray paths.

The station corrections obtained correlate with the major surface geological features in the study area. As a result of the relocation, the majority of the hypocenters shifted upward and the relocated epicenters are closer to the faults than those before relocation.