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More precise location of Aswan seismicity based on waveform analysis

Accuracy of the hypocentral location of Aswan seismicity is not well fixed and supports upgrading the local Aswan Seismic Network (LASN), which is now composed of 23 filed stations distributed in relatively narrow area (80 X 80 km2) south of Aswan High Dam. Its data are digitally-recorded waveform of seismic events.This study aims to improve the hypocentral location accuracy based on waveform analysis by applying the Cross Correlation analysis. The results demonstrate that there are ± delay in the P-wave and the S wave arrival times of the study events relative to the master at the same station (i.e., Δ Pt ranges between 0.15 and 0.11 second, while Δ St ranges between 0.17 and 0.11 second). It is here attributed to an error in the manually picking arrival times. We assumed that the P- and S- velocity distribution remains constant during this sequence of events activity. The relocated events demonstrate more closed distribution to the master event focus demonstrating they originate from a nearly unique location, rather than the zone identified from the preliminary locations which used manually picked onset times.. Key words: Aswan seismicity, waveform analyses, precise location

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