



Recent Ground Deformation around the Northern Part of Lake Nasser, Aswan, Egypt Using GPS and InSAR

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The rate of seismic activity around the Lake Nasser was rapidly increased after the creation of the High Dam. The largest earthquake recorded in this area was the November 14, 1981, with magnitude ML5.6 at Kalabsha fault, 60 km southwest of Aswan High Dam. Due to the great importance of this region, many attempts were made to constrain the ground deformation around the northern part of Nasser Lake using GPS data. Due to the sparse spatial resolution of the GPS stations in this region, the achieved results need more verification. Therefore, we are using about 15 years of campaign data collected from the local geodetic network around the northern part of the Lake in addition to 34 SAR scenes, covering the time span from 2002 to 2010, to better constrain the ground deformation of this area. The processing of the GPS data was carried out using GAMIT/GLOBK whereas, the NSBAS technique was applied to the SAR scenes. Combining the results from both GPS and InSAR analysis may help to better understand the geodynamical behavior of such an important region in Egypt for the safety of human and vital national constructions.