Combination of satellite SAR and GNSS data of co-seismic deformation after the November 26, 2019 Albania earthquake: first results

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The November 26, 2019 a Mw 6.2 earthquake struck the city of Durres as well as several towns in the Northwestern of Albania. The event killed 51 people, injured more than 900 and destroyed several buildings in the epicentral area. This area is dominated by active thrust tectonics due to the collision between Adriatic and Eurasian plates. This study shows the first results about the co-seismic displacements field estimated by the analysis of satellite SAR and GNSS data. In particular, GNSS observations were acquired by a network of 18 continuous GNSS stations located in the Albanian area. Using the GAMIT/GLOBK, GNSS data were processed within a time period ranging from January 1, 2016 to December 31, 2019 and time series produced. Moreover, a number of ascending and descending radar images acquired by the Sentinel-1 satellite in the period of the seismic event were processed using the ESA SNAP software. Pre-seismic, co-seismic and post-seismic interferograms provided the LOS displacement maps of the event and characterized the main deformation phenomena produced by such an event. The first preliminary results about the co-seismic displacements will be presented and compared with some theoretical co-seismic displacement fields provided thanks to the knowledge of the fault system affecting the area.