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ABSOLUTE AND RELATIVE POSITION OF STRAIN NETWORKS ON THE ANTARCTIC PLATEAU: THE CASE STUDY OF DOMEC

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Long time series coming from geodetic techniques such as Very Long Baseline Interferometry, GPS, Satellite Laser Ranging, DORIS.are routinely used for measuring global geodynamics.

In remote regions (E.G. the Antarctic plateau) the deployment of permanent and/or semi-permanent instruments, is strongly constrained by environmental conditions and logistics; as a result, control networks are frequently characterized by a campaign-style repetitions of measurements. With the aim to study the velocities of the ice, whenever speeds are at few cm/y level as in the case of the dome summit close to Station Concordia (Dome C), it is necessary to be able to discriminate between relative movements due to the local morphology and those absolute induced from the tectonic effects of continental drift.

We analyse here the feasibility to use one year of GPS static acquisition collected at Station Concordia in 2005 to provide an accurate link to the ITRF, of a strain network composed by 37 stations positioned in four concentric rings at increasing distances (3, 6, 12.5 and 25 km) from the summit of the topographic Dome.