GPS data processing approaches for movements evaluation: application to VLNDEF network, Antarctica

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Verification and validation of the achieved results are main features of geodesy. Here we present the results of the Victoria Land Network for DEFormation control (VLNDEF) GPS data processing. The network was established in 1999 and it is composed by one permanent station (TNB1), observing since 1998, and 25 points periodically surveyed. Three complete campaigns and some partial surveying of the network have been carried out in this time frame.

In order to crosscheck the results, we have investigated the GPS datasets applying different software and processing strategies. Particularly both differenced and undifferenced code and carrier observation approaches were used. Thus, a comparison between two totally different softwares (Bernese and GIPSY/OASIS II) was performed on the continuous and the campaign-style GPS data and differences in the terms of positions and movements are presented.