



Classical geodesy methods applied to active fault monitoring in Ny Aalesund (Western Svalbard)

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The most recent results obtained by different geodetic techniques (VLBI, GPS) show a motion of the Ny-Aalesund station up to 6 mm/yr. in vertical component, that cannot be explained by post-glacial rebound only. It was thus fundamental to investigate the stability of the site combining both structural geological and classical geodetic techniques. For this purpose, an integrated geodetic network (spirit levelling and GPS) was established and measured. One of the main difficulties in realising these measurements originated by the particular characteristics of the upper part of the soil during the summer. Tundra presents soft strata where spirit levelling is very difficult to perform. In order to avoid loss of accuracy, spirit levelling that has been performed outside of marked roads has been extensively pre-planned. This approach allowed to reach good results on these critic areas too. Local geological features of Ny-Aalesund area have been used for enlarging the local ground control network and future surveys will provide an indication of the presence or the absence of local contribution to the general uplift trend that is determined using Space Geodesy.