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Data analysis of French mobile telemetry laser campaign in Tahiti in 2011

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We present the first results of data analysis from the French mobile telemetry laser campaign in Tahiti in 2011. The laser station (7822) is near an American mobile laser station (7124), and they have the observations to the same geodesy satellites (Lageos 1 and 2, stella and starlette etc) during the campaign. The observations from these two stations are analysed during June and September 2011. The models of GINS and DYNAMO are developed at CNES and are used in this study. The GINS is useful for calculating the satellite orbits, and DYNAMO can resolve the normal equations in order to estimate some parameters such as the station coordinations. In this study we have tried to 1) evaluate the effects of some important parameters on the orbit calculation; 2) use observations to multiple satellites in order to find the best combination of normal equations and to calculate the station coordinations; 3) to find the colocalisation between 7822 and 7124. The colocalisation results are compared with those from the ITRF and a local GPS campaign, and they show a good agreement (with a difference of 3mm in distance). The colocalisation provided by three techniques , ie., laser, Doris and GPS is also of interest of this study.