Use of terrestrial laser scan data in detailed geological structure mapping: a case study from Vekara, SW-Finland

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In the ongoing research project dense network of terrestrial laser scanning (TLS) point clouds has been acquired on a small, perfectly exposed skerry SW of the Vekara island in SW Finland. This study aims at extraction of structural surfaces from TLS point clouds to retrieve the attitudes and networks of geological structures such as beddings and fractures. To test the applicability of the method for the relatively flat topography of the study area, the results will be correlated with transit compass measurements conducted on specific structural planes (Assali et al., 2014, Kwong et al., 2007 and Fishera et al., 2014), and localized by RTK-GPS. Future work will focus at (semi)automated extracation of structural data from TLS points clouds. Future work will further utilize high-resolution aerial photography in recognizing the networks of brittle structures and their relationships with the ductile structures.

References:

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