

Extract of the paper “SDART Software: A Novel Tool Designed to Enhance Learning in Adjustment Computation in Surveying”

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Abstract

This article presents a teaching-learning methodology designed for the acquisition of competences related to the subject of Adjustment of Observations in the Degree in Engineering in Geomatics and Surveying. The activity has been designed to cover the majority of the competences and learning objectives of the subject. And due to the wide scope of the activity's goal, a novel teaching support software has been developed (SDART) to be used in conjunction with other free suites (Octave). Through an application of the Project-Based Learning methodology in a simple observation project of a surveying network, the students will develop their mathematical and statistical competences. The focus of the approach is allowing the students to understand and interpret the different error sources in field observations and their role in the process of determining the optimal solution by means of least squares. This teaching-learning approach supported by the ad-hoc developed software will assist the students to achieve their learning goals and reach the professional skills required for their practical work in geomatics and surveying.

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Keywords

Competences; Software development; Least squares; Geomatics; Surveying

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