



International Society for Photogrammetry and Remote Sensing



Volume XXXIX-B5

Int. Arch. Photogramm. Remote Sens. Spatial Inf. Sci., XXXIX-B5, 251-256, 2012
www.int-arch-photogramm-remote-sens-spatial-inf-sci.net/XXXIX-B5/251/2012/
doi: 10.5194/isprsarchives-XXXIX-B5-251-2012
© Author(s) 2012. This work is distributed
under the Creative Commons Attribution 3.0 License.

TOWARDS TRANSPARENT QUALITY MEASURES IN SURFACE BASED REGISTRATION PROCESSES: EFFECTS OF DEFORMATION ONTO COMMERCIAL AND SCIENTIFIC IMPLEMENTATIONS

D. Wujanz

Berlin Institute of Technology, Department of Geodesy and Geoinformation Science, Chair of Geodesy and Adjustment Theory, Strasse des 17. Juni, 10623 Berlin, Germany

Keywords: TLS, Registration, Point Cloud, Accuracy, Quality, Deformation

Abstract. Terrestrial Laser Scanners have been widely accepted as a surveying instrument in research as well as in commercial applications. While aspects of scanner accuracy and other influential impacts onto the measured values have been extensively analysed, the impact of registration methods and especially the assessment of transformation parameters remained outside the scientific focus. To this day the outcome of a surface based registration, such as ICP or 4PCS, is usually described by a single number representing several thousand points that have been used to derive the transformation parameters. This description neglects established perceptions in geodesy where for instance distribution, size of all derived residuals and its location are considered. This contribution proposes a more objective view on the outcome of registration processes and compares new approaches to results derived with commercial solutions. The impact of deformation is also analysed in order to determine if available solutions are able to cope with this problem.

[Conference Paper](#) (PDF, 1354 KB)

Citation: Wujanz, D.: TOWARDS TRANSPARENT QUALITY MEASURES IN SURFACE BASED REGISTRATION PROCESSES: EFFECTS OF DEFORMATION ONTO COMMERCIAL AND SCIENTIFIC IMPLEMENTATIONS, Int. Arch. Photogramm. Remote Sens. Spatial Inf. Sci., XXXIX-B5, 251-256, doi:10.5194/isprsarchives-XXXIX-B5-251-2012, 2012.

[Bibtex](#) [EndNote](#) [Reference Manager](#) [XML](#)

