



[Volume XXXVIII-5/W16](#)

Int. Arch. Photogramm. Remote Sens. Spatial Inf. Sci., XXXVIII-5/W16, 277-284, 2011
www.int-arch-photogramm-remote-sens-spatial-inf-sci.net/XXXVIII-5-W16/277/2011/
doi: 10.5194/isprsarchives-XXXVIII-5-W16-277-2011
© Author(s) 2011. This work is distributed
under the Creative Commons Attribution 3.0 License.

AUTOMATED AND ACCURATE ORIENTATION OF COMPLEX IMAGE SEQUENCES

L. Barazzetti¹, F. Remondino², and M. Scaioni¹

¹Politecnico di Milano, Dept. of Building Engineering Science and Technology, Milan, Italy

²3D Optical Metrology Unit, Bruno Kessler Foundation (FBK), Trento, Italy

Keywords: Automation, Accuracy, Matching, Orientation

Abstract. The paper illustrates an automated methodology capable of finding tie points in different categories of images for a successive orientation and camera pose estimation procedure. The algorithmic implementation is encapsulated into a software called ATiPE. The entire procedure combines several algorithms of both Computer Vision (CV) and Photogrammetry in order to obtain accurate results in an automated way. Although there exist numerous efficient solutions for images taken with the traditional aerial block geometry, the complexity and diversity of image network geometry in close-range applications makes the automatic identification of tie points a very complicated task. The reported examples were made available for the 3D-ARCH 2011 conference and include images featuring different characteristics in terms of resolution, network geometry, calibration information and external constraints (ground control points, known distances). In addition, some further examples are shown, that demonstrate the capability of the orientation procedure to cope with a large variety of block configurations.

[Conference Paper](#) (PDF, 3953 KB)

Citation: Barazzetti, L., Remondino, F., and Scaioni, M.: AUTOMATED AND ACCURATE ORIENTATION OF COMPLEX IMAGE SEQUENCES, Int. Arch. Photogramm. Remote Sens. Spatial Inf. Sci., XXXVIII-5/W16, 277-284, doi:10.5194/isprsarchives-XXXVIII-5-W16-277-2011, 2011.

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

