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Aerial photogrammetry procedure optimized for micro uav

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Abstract. This paper proposes the automatic aerial photogrammetry procedure optimized for Micro UAV that has ability of autonomous flight. The most important goal of our proposed method is the reducing the processing cost for fully automatic reconstruction of DSM from a large amount of image obtained from Micro UAV. For this goal, we have developed automatic corresponding point generation procedure using feature point tracking algorithm considering position and attitude information, which obtained from onboard GPS-IMU integrated on Micro UAV. In addition, we have developed the automatic exterior orientation and registration procedure from the automatic generated corresponding points on each image and position and attitude information from Micro UAV. Moreover, in order to reconstruct precise DSM, we have developed the area base matching process which considering edge information.

In this paper, we describe processing flow of our automatic aerial photogrammetry. Moreover, the accuracy assessment is also described. Furthermore, some application of automatic reconstruction of DSM will be desired.

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