Investigation Into The Positioning Accuracy Of ROCSAT-II Imagery Among Geometric Transformation Models

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Abstract:

Since rocsat- remote sensing satellite was launched on 21 may 21 2004, the surveying and mapping agency or research units have been highly expecting its full exploitation on geo-spatial-related applications, such as dem generation, ortho-photo products, change detection or environmental monitoring tasks, etc. Along with the attracted applications, what may soon be asked for is the positioning accuracy of this satellite. Is this paper, the authors aim at analyzing the positioning potential of rocsat-ii, with the push-broom imaging geometry and 2-meter ground resolution in panchromatic mode, by geometric transformation models, including bundle adjustment, rational function model (rfm) and polynomial transformation by using both simulated data and real imagery. The influences of control points on their number, distribution and accuracy on the overall positioning accuracy have been also targeted. The results of this work provide the information for appropriately treating rocsat-ii on what level of accuracy that one may expect and how to achieve that level of accuracy.