Thursday, October 11
Poster Session 4
10:30–12:00

Poster 215

APPLICATION OF CLUSTERING SCHEME ON BATHYMETRY DERIVATION FROM LANDSAT 8 (L8) IMAGES

By incorporating image segmentation technique, an innovative cluster Spectral Optimization scheme for bathymetry derivation from Landsat-8 (L8) images is proposed. The scheme is based on the HOPE model developed in the 1990's (Lee et. al., 1998 & 1999). The reliability of this scheme is validated by SHOALS (Scanning Hydrographic Operational Airborne LiDAR Survey) measurements in Kaneohe Bay. Besides, comparison was made among the bathymetry derived from traditional HOPE model, regression based scheme (i.e., Pacheco et. al., 2015) and the proposed cluster scheme. Among 20662 match up pixels with depth less than 15 m, the proposed cluster scheme has the best performance with RMSE = 1.01, while the RMSE vale of the other two schemes is 1.89 and 1.79, respectively. The result indicates that the cluster scheme could significantly improve the bathymetry derivation from L8 images.

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