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## Water Quality Analysis of Lake Hachiroko, Japan, using ALOS PALSAR Data

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In recent years, remote sensing data have been used for water quality analyses. Such data have favorable features, including instantaneousness, wide area of coverage and periodicity. In our previous studies, we analyzed the data collected from an Advanced Visible and Near Infrared Radiometer type-2 (AVNIR-2) optical sensor of the Advanced Land Observing Satellite (ALOS), and an active sensor of JERS-1 Synthetic Aperture Radar (SAR), using a fuzzy regression model with one input and one output. In this paper, to examine the usefulness of the fuzzy regression model for a water quality analysis, data from ALOS Phased Array type L-band Synthetic Aperture Radar (PALSAR) are used. A fuzzy regression analysis was performed using the Min and Max problems, and through fuzzy-level slice processing, maps of the estimated water quality were obtained from the ALOS PALSAR data. Furthermore, by comparing the results obtained using data collected from both ALOS AVNIR-2 and JERS-1 SAR, we examine the differences in the classification resulting from the differences in the sensors and resolutions.

**Key Words** : ALOS PALSAR, fuzzy regression model, water quality