

## **Spatial Distribution of Chlorophyll in Mono Lake Detected by AVIRIS**

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Synoptic measurements of chlorophyll concentrations are used to monitor water quality. Chlorophyll maps made from AVIRIS images are being used as part of a long-term investigation of plankton dynamics and mixing of Mono Lake.

AVIRIS images from 1992 through 1996 were atmospherically corrected by applying a modified version of MODTRAN validated against simultaneously collected surface spectra. The chlorophyll predictive equation fit to the AVIRIS Rrs band ratio  $Rrs(490nm)/Rrs(555nm)$  is close to that fit to the band ratio in spectra measured in situ. The AVIRIS Rrs band ratio can explain 70% of the variability in measured chlorophyll, whereas that band ratio from the field spectra explains 82%. Some of this difference can be attributed to the imperfect atmospheric correction (Gastil, 1998). The fact that a predictive equation is used to map chlorophyll in seven AVIRIS surveys indicates the method is adequate. Two to three flight lines are mosaicked to cover the entire lake. The chlorophyll distribution images are georectified to overlay bathymetry contours outlining where the lake bottom affects the AVIRIS image and can distort chlorophyll predictions. The images exhibit spatial patterns in the chlorophyll distribution, with some patterns repeated.