



Analysis of Laser Fluorosensor Systems for Remote Algae Detection and Quantification (Classic Reprint)

By Edward V Brownell

Forgotten Books, United States, 2015. Paperback. Book Condition: New. 229 x 152 mm. Language: English . Brand New Book ***** Print on Demand *****.Excerpt from Analysis of Laser Fluorosensor Systems for Remote Algae Detection and Quantification The development and performance of single - and multiple-wavelength laser fluorosensor systems for use in the remote detection and quantification of algae are discussed in this paper. The appropriate equation for the fluorescence power received by a laser fluorosensor system is derived in detail, and the result is found to differ by as much as a factor of 10 from those previously reported in the literature. Experimental development of a single-wavelength system and a four-wavelength system, which selectively excites the algae contained in the four primary algal color groups (green, golden-brown, red, and blue-green), is reviewed, and test results are shown. A comprehensive error analysis is reported which evaluates the uncertainty in the remote determination of the chlorophyll a concentration contained in algae by single-and multiple-wavelength laser fluorosensor systems. Environmental parameters which can greatly affect the fluorescence cross section of algae include long-and short-term light history and nutrient and age effects. Results of the error analysis indicate that the remote quantification of chlorophyll a...



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