

2nd Annual Water Quality Health Indicators and Data Science Symposium

Title:

Use of FlowCAM in the Sacramento-San Joaquin Delta: An Innovative Technology to Rapidly and Reliably Perform Particle Analysis

Author:

Sarah A. Lesmeister

Affiliation:

CA Department of Water Resources

Abstract:

The FlowCAM (Flow Cytometer and Microscope) is an automated imaging technology that analyzes particles accurately, reliably and quickly in various research settings worldwide. The technology is able to count, capture and save images of particles and microorganisms (2µm-2mm) in a fluid stream, at a rate up to 10,000 images per minute. For each image, 30 different measurements (i.e. length, width, and fluorescence) are provided in real-time and can be sorted, filtered and classified using the innovative Visual Spreadsheet software. Prior studies in the Delta using FlowCAM technology have provided valuable information on phytoplankton and harmful algal blooms. Current studies using the technology are investigating the effects of the 2014 and 2015 drought on *Microcystis* and zooplankton abundance and biovolume. Not only can the FlowCAM technology be used in future special studies, it can be integrated into long-term monitoring programs to address changes in taxa characteristics (e.g. size) over time.