TOPIC: Two-Dimensional Image Extraction and Particle Interpretation for Sediment Samples

LEAD: Dan Gooding

BACKGROUND:

Many of the current methods used by USGS Sediment Laboratories for sediment analysis of concentration and particle size have been used literally for generations. Biggest reasons for this is the methods are simple, reasonably inexpensive to setup, and they work! One of the downfalls of the laboratory methods are the analysis techniques can vary from lab-to-lab, person-to-person based on training and experience. New methods for sampling and analysis are routinely evaluated by the USGS in search of new technology that may automate such customary sampling and sample analysis that are currently being used by the USGS Sediment Laboratories. New technologies that can hopefully work will reduce lab tech training, improve repeatability of results among the labs, and increase lab production.

A digital optic-image analysis and pattern recognition system that does not require routine calibration has been developed and is being adapted to quantifying SSCs and selected size and shape characteristics of suspended sediment in water samples. This presentation will give a progress report on the development and viability of this technique to be use for sediment particle distribution and SSC within the USGS Labs.