Shallow Depth Measurements of Semitransparent Media

Lidar Depth Measurement System

ASTRALiTe is developing a handheld lidar bathymetry device with unprecedented resolution (1 cm) opening a new capability in shallow water mapping while reducing complexity and cost.

Lidar water depth measurements work by transmitting laser pulses from above the water and recording the time-delay between top and bottom reflections. Lidar provides a noncontact, mobile solution for mapping water depth, underwater terrain, and submerged objects. Our INPHAMIS technique provides real-time, high precision measurements of depth and subsurface terrain.

Laboratory demonstration of a green laser system scanned horizontally across a water-and-sand filled aquarium into which two rocks are placed. This data highlights the seamless land-to-water transition, the 1 cm depth resolution, and the high precision subsurface mapping clearly identifying the two rocks.
Tests conducted at USGS indoor river (Geomorphology and Sediment Transport Laboratory, Golden CO)
Mapped the bottom of the channel with 1 cm resolution under flowing water

Demonstrated ability to detect small underwater objects