

## Delivery of ultra-deep Acoustic Zooplankton and Fish Profiler (AZFP) to The Institute of Oceanography and Global Change, Canary Islands, Spain

---

ASL Environmental Sciences Inc. has successfully collaborated with the Institute of Oceanography and Global Change for the adaption of ASL's Acoustic Zooplankton and Fish Profiler (AZFP) for use as a tool to study the deep water (1000m+) zooplankton and micronekton in the subtropical waters of the Atlantic Ocean through measurement of quasi-instantaneous vertical profiles.

The new instrument is intended to provide absolute acoustic backscatter at four frequencies (38, 125, 200 and 455 kHz) as it is lowered down the water column to a maximum of 6000m of water depth.

As part of the project, ASL designed a prototype instrument and tested it to evaluate multiple frequency technology for use as a standard instrument in oceanography. The instrument will provide acoustic data from the bathypelagic zone of the oceans to complement other parameters for the study of deep water zooplankton, micronekton, and large particles.

The scientific collaboration includes the adaption of the existing Acoustic Zooplankton and Fish Profiler (AZFP) manufactured by ASL. ASL plans to leverage small, reliable and affordable MF-AWCP instruments with up to 4 frequencies for use as a profiling instrument below a rosette sampling system. Further, ASL modified the instrument package to increase its maximum operating depth from 1000m to 6000m of water depth. The instrument will be powered from an internal battery for a period of at least 20 hours of continuous pinging and will include enough removable memory to store three days' worth of raw data.

The goal of the collaboration between ASL and Dr. Santiago Hernández-León, Institute of Oceanography and Global Change, is to evaluate factors which contribute to errors in the measurement of the absolute backscatter strength (Sv) and target strength (Ts) of ensonified targets. Dr. Santiago Hernández-León will field test the prototype instrument with respect to acoustic calibration at depth. Upon successful completion, the parties shall collaborate in the publication of a technical paper.



*Dr. Santiago Hernández-León, Institute of Oceanography and Global Change*