

# Current Trends in Low Cost Lander Design and Operation

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**10:00-11:30 am Joint Seminar with GG & HIGP**

## Abstract

Benthic Landers (free descent/ascent vehicles) can enable many current ocean research investigations that might not be accomplished any other way. They can be launched from virtually any size vessel with a wooden tip ramp, travel to any depth of the ocean, be deployed in and stay for durations of hours to years. Landers can be small enough to be lifted with one hand from the ocean, yet strong enough to journey to the bottom of any ocean trench. They can be close coupled to the anchor for near bottom benthic work, or tethered some distance into the mid-water. With the anchor release, by timer or acoustic command, they float back to the surface bringing data or samples. While they are not capable of 24-7 data transmission for extended lengths of time, they enable many studies similar to the OOS cable-to-shore networks. They provide researchers and development engineers of all levels an affordable opportunity to test an idea or gain valuable experience and engineering expertise.

This seminar will review common elements and new technologies of Benthic Lander design, applications, including their advantages, limitations, and seaborne operations.

Small landers with no HazMat have been flown overnight on passenger aircraft to remote destinations. Sitting in the solitude of the seafloor, landers are absolutely quiet, allowing recording of ambient sound fields or luring benthic fauna to baited traps or cameras. The presentation will be illustrated with real-world examples of applications and results from the presenters' personal experience and those of other operators.

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