Shedding light on ocean matters

Underwater sensing is the raw material of how we perceive the ocean. We aim to improve our observational capabilities by investigating the interactions of photons with matter in harsh underwater environments.

- **Scintillation**: Monitoring of seafloor radiation using in situ gamma-ray spectroscopy
- **Atomic emission**: Laser-induced plasma for in situ element analysis
- **Raman scattering**: Laser Raman for in situ analysis of molecules
- **Interference**: Laser holography for high volume microscopic imaging
- **Machine vision**: Structured light for wide area 3D visual seafloor reconstruction
- **Machine learning**: Probabilistic modeling for automated information extraction