



Passive Acoustic Monitoring from ocean gliders

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Passive acoustic measurements from gliders are in their infancy but highly promising. New methods developed for moorings or drifting platforms can be adapted for gliders. The long range, low cost, high-resolution and multidisciplinary capabilities of a glider, together with processing and transmitting of Passive Acoustic Monitoring (PAM) sensor data in real time, will revolutionise the way acoustic data are applied both scientifically and commercially. We have been deploying PAM gliders for 5 years, recording underwater ambient noise in the Mediterranean Sea, the North Atlantic Ocean and the Southern Ocean. From oceanic ambient noise analysis, we are able to measure the sea surface wind speed and monitor storm events, to detect and classify whale sounds and fish choruses, to evaluate the anthropogenic contribution to the underwater soundscape.

These new abilities broaden the observation spectrum of the ocean gliders. From storm detection and wind speed measurement, we could quantify critically important air-sea fluxes. From marine mammal detection, we could follow a population, estimate its size, behaviour and location, and thus reduce harmful anthropogenic impacts and map cetacean behaviour patterns to oceanographic features of interest (blooms, krill swarms). We could provide a high-resolution soundscape of a region of interest, such as a marine protected area, or an offshore activities site, and monitor the activity and evolution of an ecosystem.