Title: “Autonomous underwater vehicles: exploring the ocean from coast to the deep sea”

Abstract:

71% of Earth’s surface is covered by water. Nevertheless, oceans are mostly unknown, with more than 80% still unmapped, unobserved and unexplored.

Oceanographic robots and increasingly sophisticated sensors have enabled to measure places not easily accessible through conventional means. These new systems provide complementary information with respect to what is available from ships by acting as force-multipliers. They can provide ground truth for satellite remote sensing and extend measurements along the 3rd spatial dimension—depth. Endowed with on-board intelligence and the capability to move and/or adapt to the environment, oceanographic robotics has the potential to improve the quality and persistence of observations, at a fraction of the cost of additional ships. Moreover, by building networks of smartly interconnected sensors, these robotic and autonomous systems can overcome their intrinsic limitations and provide a step change in our ability to understand the oceans.

This work will show some examples on how the new robots are revolutionising our way of exploring and monitoring the ocean.