

PAPER SUBMISSION:

Authors are encouraged to submit high-quality, original work that has neither appeared in, nor is under consideration by, other journals.

All papers will be reviewed following standard reviewing procedures for the Journal.

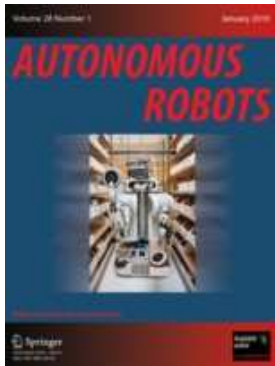
Papers must be prepared in accordance with the Journal guidelines:
<http://www.springer.com/10514>

Manuscripts must be submitted to: <http://AURO.edmgr.com>.
Choose “**Long-term autonomy in Marine Robotics**” as the article type.

Important Dates

- **Paper submission deadline:**
15th October 2014
- **First reviews completed:**
15th January 2015
- **Revised papers due:**
15th February 2015
- **Potential publication date:**
Summer 2015

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AUTONOMOUS ROBOTS

~Special Issue Call for Papers~

“Towards Long-term Autonomy in Marine Robotics”

Guest Editors:

Marc Carreras, University of Girona, Spain

David Lane, Heriot-Watt University, United Kingdom

Francesco Maurelli, Heriot-Watt University, United Kingdom

Kanna Rajan, MBARI, United States

In recent years, persistent autonomous operations have become a key area of interest for marine robotics researchers. As hardware costs have plummeted, sensors measuring various oceanographic properties have proliferated and the use of robotic platforms within the ocean science community has increased, the need for increased autonomy to perform tasks over large spatial and temporal durations. The challenge in doing so, is particularly severe in the context of the marine environment however, and especially for robotic assets to be observable and communicable over space and time. Over and beyond making time-series measurements marine robots have demonstrated their capability to respond to episodic events, perform targeted sample collection, track dynamic phenomenon in rough coastal environments and make quasi-synoptic observations in the meso-scale.

However, there continue to be significant challenges to marine robotic operations. While commercial deep-water oilfield inspection with autonomous vehicles is now a commercial reality, fielded robots continue to rely heavily on accurate a priori models of the subsea assets and expose limited capabilities for autonomous decision making.

Most autonomous vehicles in the marine environment are limited to preplanned missions, or to limited forms of autonomy involving script switching and re-parametrisation in response to pre-programmed events. Realizing the persistent autonomy that users in the ocean increasingly demand is involving a greater capability in understanding sensed events to detect failure and error, and more capable task planning approaches that can adapt behaviour and control in novel ways.

Topics of interest include, but are not limited to:

Autonomous long-term navigation, localization and SLAM

Automated dynamic re-planning, planning under uncertainty

Semantic-based world modelling, probabilistic approaches in ontologies

Architectures for long-term autonomy

Robust learning techniques

Probabilistic graphical models

Bio-inspired and bio-mimetic approaches

Multi-vehicle cooperation potentially in multiple domains (air, surface, underwater)

In this special issue of Autonomous Robots journal, we invite:

Research papers to report innovative work in the field (up to 20 pages)

Applied research case-studies to analyse industrial needs, current states and needs for current and future operations (up to 20 pages)

Systems which exhibit these novel techniques should either be used on real-world marine robots, field experiments or demonstrations or authors should clearly demonstrate how they would transition such systems to the real world.

For more information, contact the guest editors at: auro-marine@googlegroups.com