11th International Robotic Sailing Conference 2018

CEUR Workshop Proceedings Volume 2331

Southhampton, United Kingdom 31 August – 1 September 2018

Editors:

Sophia M. Schillai Nicholas Townsend

ISBN: 978-1-7138-2912-6

Printed from e-media with permission by:

Curran Associates, Inc. 57 Morehouse Lane Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2018) for the individual papers by the papers' authors. Copying permitted for private and academic purposes. Re-publication of material from this volume requires permission by the copyright owners.

All rights reserved.

Printed with permission by Curran Associates, Inc. (2021)

For permission requests, please contact the Editors at the address below.

University of Southampton - Faculty of Engineering Boldrewood Campus Burgess Road Southampton, SO16 7QF United Kingdom

http://ceur-ws.org/Vol-2331/

Additional copies of this publication are available from:

Curran Associates, Inc. 57 Morehouse Lane Red Hook, NY 12571 USA Phone: 845-758-0400

Fax: 845-758-2633

Email: curran@proceedings.com Web: www.proceedings.com

Contents

Ι	Vessel Development & Modelling	9
	Development and Test of an Open-Source Autonomous Sailing Robot with Accessibility, Generality and Extendibility	
	Ulysse Vautier, Jian Wan, Ming Dai, Christophe Viel and Robert Hone	11
	Peruagus - a Transatlantic Autonomous Surface Vessel for the Microtransat Challenge Elettra Ganoulis, Adam Alcantara, Julian Niedermaier, Robert Winn, Nicholas Jones, Antonio Mazzone Tur, James Blake and Nicholas Townsend	21
	Dynamic Simulation Model for an Autonomous Sailboat Moritz Bühler, Carsten Heinz and Simon Kohaut	31
	Backstepping Control of an Autonomous Catamaran Sailboat Helmi Abrougui and Samir Nejim	41
II	Safe Navigation	51
	Securing Navigation of Unmanned Maritime Systems Tope Omitola, Jon Downes, Gary Wills, Mark Zwolinski and Michael Butler	53
	ASVTrafficSim: A simulator for Autonomous Surface Vehicle and Manned Vessel Collisions Colin Sauze	63
II	I Manoeuvre & Route Planning	69
	Reliability informed routing for Autonomous Sailing Craft Thomas Dickson, James Blake and David Sear	71
	Study of Long-term Route Planning for Autonomous Sailboat Mingshu Du, Mengqi Kang, Chunxiao Hou and Jinsong Xu	79
	Tight Slalom Control for Sailboat Robots Maël Le Gallic, Joris Tillet, Fabrice Le Bars and Luc Jaulin	87
	Adaptive Probabilistic Tack Manoeuvre Decision for Sailing Vessels Sébastien Lemaire, Yu Cao, Thomas Kluyver, Daniel Hausner, Camil Vasilovici, Zhong-Yuen Lee, Umberto José Varbaro and Sophia M. Schillai	95
	Isobath Following using an Altimeter as a Unique Exteroceptive Sensor $Luc\ Jaulin\ \dots$	105