



# PASSIVE'08

Hyères, French Riviera, France  
October 14-17, 2008

**An IEEE Workshop & Exhibition on  
New Trends for Environmental Monitoring using  
Passive Systems**

sponsored by the IEEE Oceanic Engineering Society



## Final Program

[www.passive08-hyeres.org](http://www.passive08-hyeres.org)



# TABLE OF CONTENTS

<b>Active Digital Goniometry, Principles and Results</b> .....	1
<i>Sami Harari</i>	
<b>Automatic prosodic clustering of humpback whales song</b> .....	7
<i>O. Adam, G. Picot, M. Bergougnoux, H. Glotin, F. X. Mayer</i>	
<b>Flood-fill algorithms used for passive acoustic detection and tracking</b> .....	13
<i>Eva-Marie Nosal</i>	
<b>Stochastic Matched Filter outperforms Teager-Kaiser-Mallat for tracking a plurality of sperm whales</b> .....	18
<i>Frederic Caudal, Herve Glotin</i>	
<b>Mallat's Matching Pursuit of Sperm Whale Clicks in Real-Time using Daubechies 15 wavelets</b> .....	27
<i>Fabien Lelandais, Herve Glotin</i>	
<b>High Level Automatic Structuration of Ocean Passive Data : from Click Sequence Modulations to Whale Behavior Analyses</b> .....	32
<i>Frederic Caudal, Herve Glotin</i>	
<b>Passive Tomography in Coastal Areas : a Feasibility Study of the Ushant Front Monitoring</b> .....	39
<i>Jean-Pierre Hermand, Olivier Carriere, Yann Stephan</i>	
<b>FFT-Based Sonar Array Beamforming Without Corner Turning</b> .....	45
<i>Jacob Barhen, Travis Humble, Michael Traweek</i>	
<b>Passive Acoustic Storey of the ANTARES Neutrino Detector for Real-time Cetaceans Detection, Localization and Behavior Studies</b> .....	51
<i>O. Adam, Herve Glotin</i>	
<b>Pelagic Delphinids of the Mediterranean Sea Have Different Whistles</b> .....	57
<i>Alexandre Gannier, Sandra Fuchs, Julie Oswald</i>	
<b>Background Spectral Estimation Via Robust Kalman Filtering</b> .....	61
<i>Christophe FRASCHINI, CHAILLAN Fabien</i>	
<b>A Comparison of Methods for the Automatic Classification of Marine Mammal Vocalizations in the Arctic</b> .....	67
<i>Xavier Mouy, Del Leary, Bruce Martin, Marjo Laurinolli</i>	
<b>Computer-aided Classification of Bowhead Whale Call Categories for Mitigation Monitoring</b> .....	73
<i>Delphine Mathias, Aaron Thode, Susanna Blackwell, Charles Greene</i>	
<b>A Phase based Detector of Whale Clicks</b> .....	79
<i>Varvara Kandia, Yannis Stylianou</i>	
<b>Improve the Accuracy of TDOA Measurement Using the Teager-Kaiser Energy Operator</b> .....	85
<i>Varvara Kandia, Yannis Stylianou, Thierry Dutoit</i>	
<b>Marine Mammal Risk Mitigation Using Passive Acoustic Technologies</b> .....	91
<i>Jeffrey Haun, Kendra Ryan, Nicola Portunato</i>	
<b>GPS ISAR Passive System Characterization using Point Spread Function</b> .....	96
<i>Frederic Maussang, Franck Daout, Guillaume Ginolhac, Francoise Schmitt</i>	

<b>A Comparison of Interpolation Processes: Applications to Across-track Scanning Radiometers</b> .....	100
<i>Bruno Picard, Estelle Obligis, Marie-Laure Denneulin</i>	
<b>On The Wet Tropospheric Correction for Altimeter in Coastal Regions</b> .....	105
<i>Charles Desportes, Estelle Obligis, Laurence Eymard</i>	
<b>Context Dependent Detection/classification of Cuvier's Beaked Whale (Ziphius Cavirostris)</b> .....	111
<i>Walter Zimmer, Gianni Pavan</i>	
<b>Robust Smoothing to Improve Position Estimates of Marine Mammals</b> .....	117
<i>I. Urazghildiiev, C. W. Clark</i>	
<b>Acoustic Detection and Recognition of Fin Whale and North Atlantic Right Whale Sounds</b> .....	122
<i>I. Urazghildiiev, C.W. Clark, T. Krein</i>	
<b>A Proposed Architecture for Marine Mammal Tracking from Globally Distributed Ocean Acoustic Observatories</b> .....	128
<i>E. Delory, C. Waldmann, J. Fredericks</i>	
<b>Detection and Localization of Very High Energy Neutrinos by a Passive Underwater Acoustic Telescope</b> .....	134
<i>Claude Jauffret, Nicolas Juennard, Bernard Xerri</i>	
<b>GSM Based Through-the-Wall Passive Radar Demonstrator for Motion Sensing</b> .....	140
<i>Danny Kai Pin Tan, Marc Lesturgie, Hongbo Sun, Wei Li, Yilong Lu</i>	
<b>A Real Time Seismological Station at 2500m Depth in Front Toulon</b> .....	144
<i>Anne Deschamps, Yann Hello, Philippe Charvis, Tanit Frontera, Carl Gojak</i>	
<b>Estimating the Number of Beaked Whales Using an MHT Tracker</b> .....	148
<i>Odile Gerard, Craig Carthel, Stefano Coraluppi</i>	
<b>Passive Bistatic Radar (PBR) Using FM Radio Illuminators of Opportunity</b> .....	154
<i>D. W. O'Hagan, C. J. Baker</i>	
<b>HF Passive Bistatic Radar Potentials and Applications for Remote Sensing</b> .....	160
<i>J. M. Thomas, C. J. Baker, H. D. Griffiths</i>	
<b>Beach Soil Moisture Measurement with a Land Reflected GPS Bistatic Radar Technique</b> .....	165
<i>Q. Li, S. Reboul, S. Boutoille, J. B. Choquel, M. Benjelloun, A. Gardel</i>	
<b>Project MOPS - Marine Opportunity Passive Systems</b> .....	171
<i>Arnaud Coatanhay, Rene Garello, Bertrand Chapron, Fabrice Arduin</i>	
<b>Acoustic Detection of Ice Cracking Events</b> .....	173
<i>C. Waldmann, A. Nikolovska</i>	
<b>Analysis and Classification of Beaked Whales Buzz Clicks</b> .....	179
<i>Odile Gerard, Stefano Coraluppi, Craig Carthel</i>	
<b>Assessing Ocean Salinity Retrieval Using WindSat Data Over the Amazone River Plume and North Brazil Current Retroreflection</b> .....	185
<i>Stephane Saux Picart, Nicolas Reul, Sebastien Guimbard, Bertrand Chapron, Douglas Vandemark</i>	
<b>Impact of Surface Roughness on L-band Emissivity of the Ocean -Theoretical and Empirical Analysis-</b> .....	190
<i>S. Guimbard, N. Reul, J. Tenerelli, B. Chapron</i>	
<b>Time-frequency-phase Coherence - General Framework for Signal Analysis in Passive Context</b> .....	196
<i>Cornel Ioana, Andre Quinquis, Bertrand Gottin</i>	
<b>Author Index</b>	