

ONR/MTS Buoy Workshop 2004

**St. Petersburg, Florida, USA
8-10 March 2004**

ISBN: 978-1-61738-946-7

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© (2004) by the Marine Technology Society
All rights reserved.

Printed by Curran Associates, Inc. (2010)

For permission requests, please contact the Marine Technology Society
at the address below.

Marine Technology Society
5565 Sterrett Place, Suite 108
Columbia, MD 21044

Phone: (410) 884-5330
Fax: (410) 884-9060

membership@mtsociety.org

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2634
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

SESSION 1. OVERVIEW OF BUOY SYSTEMS

A Coastal Ocean Observing System and Modeling Program for the West Florida Shelf.....	1
<i>R. H. Weisberg</i>	
The CaroCOOPS Ocean Observing Buoy System	30
<i>Jeffrey Kinder, William Sweet, Peter Clay, James Cappellini</i>	
PICO – Concept for a Global Array of Surface Moorings.....	50
<i>Hugh Milburn, Christian Meinig</i>	
GOOS Center GDP Network and Future Plans.....	71
<i>Craig Engler</i>	
Environmental Array on Southeast Florida Shelf	94
<i>A. Soloviev, T. Thompson, R. Weisberg, M. Luther, R. Cole, J. Donovan, J. Law</i>	
Field Experience with RACOM Gateway Buoys	118
<i>Kenneth Rogers, Victor Bana</i>	
Radio/Acoustic Gateway Buoys Design and Operating Experience	119
<i>Kenneth E. Rogers, Viktor Bana</i>	
The Preparation, Deployment, and Recovery of a GoMOOS Mooring	131
<i>John P. Wallinga, Lance Burton, Neal Pettigrew</i>	

SESSION 2. BUOY BASED TELEMETRY AND SENSORS

Recent Data Buoy Telemetry Developments for the National Data Buoy Center's Marine Observation Network.	155
<i>Peter Lessing</i>	
ARGOS: Where We Are – Where We're Going.....	182
<i>Debbie Shaw, Bill Woodward, Chris Estes</i>	
The Oceanic and Atmospheric Sensors Used by the National Data Buoy Center	202
<i>Eduardo Michelena, Regina Moore</i>	
Air/Sea Heat Flux, Solar Irradiance and Temperature Measurement using a Surface Contact Multi-Sensor Float.....	203
<i>J. P. Boyle</i>	

SESSION 3. BUOY SYSTEMS

A Tale of Two Buoys.....	219
<i>George M. Greider</i>	
Real Time Telemetry on the GoMOOS Moored Buoy Array – Designing for Reliability.....	236
<i>Robert L. Stessel</i>	
ALOHA Observatory Moored Sensor Network with Adaptive Sampling.....	262
<i>Tim McGinnis, Bruce Howe</i>	

SESSION 4. NEW BUOY SYSTEM DEVELOPMENTS

Development and Testing of an Interoperable Air Deployable A-Sized Gateway Navigation and Communications Buoy	294
<i>Frederick Driscoll, Pierre-Philippe Beaujean, William Venezia</i>	
NDBC New Mooring Concept.....	315
<i>Brett Taft</i>	
New Buoy Designs to Meet Difficult Environmental and Instrumentation Deployment Challenges.....	338
<i>James A. Cappellini, Peter Clay</i>	

SESSION 5. BUOY BEHAVIOR AT SEA

Emerging Buoy Technology in India and Some Interesting Data from Indian Seas Observed by the Buoys.....	369
<i>K. Premkumar</i>	
Monterey Ocean Observing System (MOOS) Portable Mooring – Project Update.....	420
<i>Mark Chaffey, Jon Erickson, Andy Hamilton, Lance McBride, Ed Mellinger, Wayne Radochonski, Tim Meese</i>	
The MOOS EOM Mooring: In-Situ Instrumentation and Shore-side Cable Testing.....	447
<i>Andrew Hamilton, Mark Chaffey</i>	
Lessons Learned From Hurricane Claudette	475
<i>John N. Walpert</i>	
Update on ULTRAMOOR and Acoustically Linked Observatory Projects.....	508
<i>Daniel Frye, Nelson Hogg, Carl Wunsch, Keith Von Der Heydt, Peter Koski, Don Peters, Ken Peal</i>	

SESSION 6. MEASUREMENTS FROM BUOY PLATFORMS

Seasonally-varying Surface Circulation in the Tropical Atlantic from Satellite-tracked Drifting Buoys.....	540
<i>Rick Lumpkin</i>	
Efficient Surface Wave Energy Harvesting System.....	564
<i>Jeffrey T. Cheung, Sriram Chandrasekaran, Robert Pinkel</i>	
U.K. Carbon Trust - Marine Energy Challenge - The Challenge for Wave Energy Conversion Buoy Developers	582
<i>Anthony T. Jones</i>	
A Real-time Telemetry Solution for ADCP Wave and Current Data	605
<i>Neil Trenaman</i>	

SESSION 7. BUOY COMPONENTS AND SYSTEMS

Composite Technology in Buoy Design.....	621
<i>Lavinio Gualdesi</i>	
Hazelett Elastic Mooring System.....	660
<i>Jeff Lefebvre, Art Cohn, Bill Hazelett</i>	
Roll, Little Buoy....Roll.....	689
<i>Henri O. Berteaux</i>	

SESSION 8. DETAIL AND BIG PICTURE

Recent Experiences with PMEL Mooring Terminations.....	706
<i>J. Michael Strick, Chris Meinig</i>	
Designing Cables for Survivability in the Dynamic Marine Environment Concepts and Case Studies	736
<i>Douglas Bentley</i>	
Modular Ocean Buoy System (MOBS)	748
<i>Don Peters, John Kemp</i>	
WHOI's Experience with Electromechanical Chains on Surface Moorings.....	774
<i>John N. Kemp</i>	
Buoy Subsea Connections allowing for Instrument Installation, Node Extension, and Adaptability for the Future.....	803
<i>Steven Thumbeck</i>	
Successful Recovery of Deep Subsurface Moorings with an ROV.....	818
<i>George Tupper</i>	
Coastal Observing with the Bottom Stationed Ocean Profiler.....	819
<i>Chad Lembke, Robert Weisberg, Robert Byrne, Mark Holly, Jim Patten, Randy Russell, Heidi Souder, Graham Tilbury</i>	
Author Index	