



Fifth Annual Workshop

April 5-6, 2011

Pfahl Executive Education Building, The Ohio State University
Columbus, OH 43210

Workshop Program - Tuesday Morning, April 5

8:00	Workshop Registration
8:30	Welcome, introductions and workshop overview <i>Frank van Graas, COUNT Director</i>
9:00	Overview of 2010-2011 Navigation Related Research at The Ohio State University ElectroScience Laboratory, <i>Inder "Jiti" Gupta</i> Poster Presentations by OSU ESL (45 minutes) Effect of Mutual Coupling on the Nulling Performance of GNSS Adaptive Antennas – Andrew Svendsen Precise Calibration of Adaptive Antennas for GNSS Receivers – Andrew O'Brien Satellite Coverage for GPS Antennas on Small Spinning Projectiles – Andrew Svendsen Interference Source Localization using GPS Antenna Arrays – Andrew Kintz Beamforming/Null Steering for Rotorcraft mounted GPS Antenna Arrays – Jay Chuang Combining Multiple FRPA for AJ Functionality in GPS Receivers – Teh-Hong Lee FRPA-3 Size 4-Element Antenna Array for GPS Receivers – Chi-Chih Chen
10:30	Overview of 2010-2011 Navigation Related Research at Miami University, <i>Jade Morton</i> Poster Presentations by Miami University (45 minutes) Track'M: A GPS Tracking System for Miami MetroBus Service – Dave Alson Indoor Target Detection Using a UWB-OFDM Software Defined Radar – Aaron Curtis and Brian Jameson Scintillation Carrier Tracking Aided by Adaptive Frequency Estimation – Xiaolei Mao Scintillation Tracking of GPS L5 and GLONASS L1 Signals Using USRP2 as a Front End – Senlin Peng Multipath Characterization to Aid Ionosphere Scintillation Event Trigger Threshold Calculation – Praveen Vikram RedBlade, A Multi-Function Autonomous Vehicle – Ryan Walfarth and Steve Taylor Advanced GLONASS Orbit Prediction to Support HAARP Heating Experiment – Jun Wang
12:00	Lunch

Workshop Program – Tuesday Afternoon, April 5

13:30

Presentation by Honeywell, Inc.

14:00

Overview of 2010-2011 Navigation Related Research at The Ohio State University Satellite Positioning and Inertial Navigation Laboratory,
Dorota A. Grejner-Brzezinska

Poster Presentations by OSU SPIN (45 minutes)

Ionospheric Disturbance Detection of the Recent North Korean Underground Nuclear Test – Jihye Park

Cross-Modality Matching between LiDAR Intensity and Satellite Image – Hui Ju
Comprehensive Error Analysis of Optical and Laser Imaging Systems – Andrew Zaydak

Application of the Ensemble Kalman Filter to GPS/Inertial Integration – Xiankun Wang

Breakline Matching to Support LiDAR based TRN – Jaehong Oh

Network-based Collaborative Navigation Algorithms in GPS-denied Environments – Jong Ki Lee

Multi-Sensor Approach to UXO Geolocation – Jong Ki Lee

Underwater Mapping and Navigation: Applications of 3D Feature Extraction Algorithms to 3D Sonar Datasets – Nikki Markiel

15:30

Presentation by The MITRE Corporation

16:00

Presentation by Rockwell Collins

16:30

Presentation by Northrop Grumman Corporation

17:00

Break

18:00

COUNT-Hosted Banquet

Workshop Program – Wednesday Morning, April 6

8:00

Coffee

8:30

Overview of 2010-2011 Navigation Related Research at the Air Force Institute of Technology, *John Raquet*

Poster Presentations by AFIT (45 minutes)

Design of Estimation/Control Algorithm for Landing on a Powerline – Lt Col Steven Ross

Navigation Using Adaptive OFDM SAR Radar with an INS – Kyle Kauffman

Integrity for Vision-Based Navigation Systems – Sean Calhoun

GNSS Signal Decomposition – Capt Marshall Haker

Navigation Using Images, Radio Ranging, and Inertial Systems – Jared Kresge

Using Polarimetry for Image-Based Navigation – Lt Jeremiah Johnson

Heavy-Lift Quad-Rotor Development – Lt Nicolas Hamilton

Vanishing Point Stabilization for Indoor Flight – Capt Dayvid Prah

10:00

Overview of 2010-2011 Navigation Related Research at Ohio University Avionics Engineering Center, *Frank van Graas*

Poster Presentations by Ohio-AEC(45 minutes)

Integration of 3D and 2D Imaging Data for Assured Navigation in Unknown Environments – Evan Dill

Measurement and Analysis of the Effect of Artificially-Generated and Natural Ionosphere Scintillations on GNSS L-Band Signals– Ohio University jointly with Miami University

Monocular Autonomously-Controlled Snowplow – Samantha Craig, Matthew Miltner

Characterization of LiDAR Navigation in Adverse Environmental Conditions – Wouter Pelgrum

Troposphere Threat Models for Aviation Applications – Priyanka Muvvala

Exploration of Stationary GNSS Timing Robustness via High Zenith Antennas – Matt Smearcheck

Enhanced DME Optimal Time-of-Arrival Estimation – Kuangmin Li

Georegistration Laboratory Test Platform – Robert Gregory

11:30

Discussions and Concluding Remarks

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