Symposium Gyro Technology 2010

Programme Committee: W. Bernard (Chairman), W. Auch, W. Geiger, J.-F. Wagner, E. von Hinüber

P R O G R A M M E

Tuesday, September 21, 2010

08:00 Registration

OPENING SESSION

09:00 Welcome

09:15 ***200 years of Gyro Technology***
J.-F. Wagner
(Universität Stuttgart, Stuttgart, GERMANY)

09:45 ***Advances in the Geodetic Application of the large Ring Laser G***
K.U. Schreiber, T. Klügel, J.-P. Wells, J. Holdaway, A. Gebauer
(Technische Universität München, Forschungseinrichtung Satellitengeodäsie, München GERMANY)

10:15 Break

Session 1: MEMS Gyros (CHAIRMAN: W. Geiger)

10:45 ***Test Results for the GYPRI Micromechanical Gyro***
J. Leclerc, C. Kergueris
(Tronics Microsystems, FRANCE)

11:15 ***SAR500 – A novel High-Precision Gyroscope***
B. Blixhavn, D. Lapadatu, R. Holm, T Kvisteroy
(Sensonor Technologies, Horten, NORWAY)

11:45 ***PinPoint™ – The new lost cost MEMS Gyroscope from Silicon Sensing***
M. Durston
(Atlantic Inertial Systems, Devon, UNITED KINGDOM)

12:15 Lunch Break

Session 2: MEMS Technology (CHAIRMAN: W. Auch)

14:00 ***A Novel MEMS IMU Made of Single Mass 3-Axes Accelerometer and a Single Mass 3-Axes Gyro with Capacitive Actuating and Readout***
B. Sun
(Cape Peninsula University of Technology, Cape Town, SOUTH AFRICA)

14:30 ***Breakthrough in High-End MEMS Accelerometers***
B. Dutoit, O. Dietrich, G. Perregaud, R. Frosio, F. Rudolf
(Colibrys SA, Neuchatel, SWITZERLAND)

15:00 ***Quadrature Mechanisms of In-Plane and out Of-plane sensing MEMS Rate Gyroscopes***
J.-T. Liewald, B. Kuhlmann, T. Balslink, Y. Manoli
(Robert Bosch GmbH Reutlingen, Reutlingen GERMANY)

15:30 Break

Session 3: Application of MEMS IMUs (CHAIRMAN: W. Schröder)

16:00 ***Cooperative UAV-Navigation-Aiding based on UGV Vision Systems***
J. Seibold, N. Frietsch, J. Gut, T. Schaich, O. Meister, G. Trommer
(University of Karlsruhe, Karlsruhe, GERMANY)

16:30 ***Closed Loop Velocity Control for an AGV Equipped with a Modified Voith-Schneider-Drive***
A. Kamagaew, T. Kirks, M. ten Hompel
(Fraunhofer Institut für Materialfluss und Logistik, Dortmund, GERMANY)

17.00 – 22.30 **Social Event: Sightseeing Tour and Evening Dinner**

Wednesday, September 22, 2010

Session 4: Optical Gyros (CHAIRMAN: M. Perlmutter)

08:30 ***Research on Technological Development of Miniature Tri-Axis FOG***
J. Wu, X. Zheng, Y. Wu, X. He
(Automatic Control Equipment Institute of Beijing, Beijing, CHINA)

09:00 ***A Novel 3-D Model for Thermal Transient Effects in Fiber Gyro Coils***
M. Li, X. Zhao
(Tianjin Navigation Instruments Research Institute, Tianjin, CHINA)

09:30 ***High-Power 1550-nm Broadband SLEDs for High-Precision Gyroscope Applications***
P. Vorreau, M. Duelk, L. Platter, C. Velez
(EXALOS AG, Schlieren, SWITZERLAND)

10:00 Break

10:30 ***Performance Evaluation of a Solid-State Ring Laser Gyro***
S. Schwartz, F. Gutty, G. Feugnet, J.-P. Pocholle
(THALES Research and Technology France, Palaiseai Cedex, FRANCE)

Session 5: High – Precision Applications (CHAIRMAN: D. Loukianov)

11:00 ***The Results of the Development of an ESG for Strapdown Inertial Attitude Reference Systems of Orbital Spacecrafts***
B.Y. Landau, S.L. Levin, S.G. Romanenko
(Concern CSIR Elektropribor, St. Petersburg, RUSSIA)

11:30 ***Hemispherical Resonator Gyro and North Finding***
Y. Foloppe, L. Rosselini
(SAGEM Défense Sécurité, France)

12:00 Lunch Break

Session 6: Structural Monitoring with Gyros (CHAIRMAN: E. von Hinüber)

14:00 ***The Application of Fiber Optic Gyros for the Monotoring of Mechanical Structures***
G. Dorner, A. Rasch, U. Schreiber, A. Carr
(Northrop-Gruman Litef GmbH, Freiburg, GERMANY

Session 7: Algorithms for Inertial Systems (CHAIRMAN: J.F. Wagner)

14:30 ***Improved Coning Algorithm for Fiber-Optic Gyrocompass***
G. Wei, B. Yueyang, Y. Zhang
(College of Automation, Harbin Engineering University, Harbin, CHINA)

15:00 Break

15:30 ***Performance Evaluation of MEMS IMU-Based Position and Orientation Systems using Simulation***
V. Varavva, J. Hutton
(Applanix Corporation, Ontario, CANADA)

16:00 ***Quantitative Analysis of the Observability of Integrated Navigation System States and its Dependencies***
A. Schwithal, M. Becker, U. Bestmann, P. Hecker
(Technische Universität Braunschweig, Braunschweig, GERMAN)

Alternative ***Measuring the Earth's Rotation Rate using a Low – CoSt MEMS Gyroscope***
L.I. Iozan, C. Rusu, J. Collin, O. Pekkalin, J. Hautamäki, J. Takala
(Technical University of Cluj-Napoca, Cluj-Napoca, ROMANIA)