Tuesday, September 20, 2016

08:00  Registration
09:00  Welcome

Session 1:  FOG I  (CHAIRMAN: T. Erler)
09:10  Touching the limit of FOG Angular Random Walk: challenges and applications
Frédéric Guattari, E. Ducloux, E. de Toldi, C. Moloucon, J. Honthaas
(ixBlue, Saint-Germain-en-Laye, FRANCE)

09:40  μRad Accumulated Angle Error FOG
Meir Rosilio, Arnon Arbel, L. Koenigsberg, N. Pasternak
(Al Cielo Inertial Solutions Ltd, Jerusalem, ISRAEL)

10:10  Understanding and control of the magnetic sensitivity of a fiber-optic gyroscope
(iXBlue SAS, Navigation Systems Business Unit, R&D Gyros, Saint Germain en Laye, FRANCE)

10:40  Coffee Break

Session 2:  FOG II  (CHAIRMAN: M. Perlmutter)
11:10  20 Years of KHV Fiber Optic Gyro Technology:
The Evolution from Large, Low Performance FOGs to Compact, Precise FOGs and FOG-based Inertial Systems
Jay Napoli
(KHV Industries, Inc., Guidance & Stabilization Division, Middletown, RI, USA)

11:40  Space grade fiber optic gyroscope: R&D results and flight tests
[(LLC RPC Optolink, Moscow / Zelenograd, RUSSIA]
[Academician M. F. Reshetnev Information Satellite Systems, Zheleznogorsk / Krasnoyarsk region, RUSSIA]

12:10  High performance Embedded GNSS INS (EGI) based on FOG sensors technology for Safety Critical Airborne applications
Roberto Senatore, Andrea Pizzarulli, Danilo Durante, Massimo Verola, Mike Perlmutter
(Civitanavi Systems, Pedaso (FM), ITALY)

12:40  Lunch Break (80min)

Session 3:  Cylindrical and Hemispherical Resonator Gyros  (CHAIRMAN: W. Geiger)
14:00  A New Metallic Coriolis Vibratory Gyroscope (CVG) with Multiple-shell Structure
Xiang Xi, Yule Li, Dingbang Xiao, Yongmeng Zhang, Xuezhong Wu
(College of Mechatronics Engineering and Automation, National University of Defense Technology, Changsha, CHINA)

14:30  Toward Software Defined Coriolis Gyroscopes: Dynamic SelfCalibration of QMG and milli-HRG
Alexander Trusov1, Dough Meyer2, [A. Bettadapura, G. H. Mccammon]1, [M. R. Philips]1
([Northrop Grumman Systems Corporation, Woodland Hills, CA, USA]
[Wright-Patterson Air Force Base, Dayton, Ohio, USA]

15:00  Coffee Break

15:30  Primus: SWAP-oriented IMUs for multiple applications
Alexandre Lenoble, T. Rouilleaut
(Sagem, Eragny sur Oise, FRANCE)

Session 4:  Future Trends  (CHAIRMAN: S. Zimmermann)
16:00  The Future of the MEMS Inertial Sensor Performance, Design and Manufacturing
Michael Perlmutter1, [Stephen Breit]2
([Civitanavi Navigation Systems, Pedaso (FM), ITALY]
[Coventor, Inc., Cary, NC, USA]

16:50  Come together @ Meeting Point (Statue of Fridericiana)
17:00  Bus departure to the city of Germersheim – Guided Tour through the ancient fortress.
20:00  Dinner at the “Festsaal im Studentenhaus” – The ballroom of the University

Alternate:
Dynamic response analysis of ultra-sensitive atomic spin gyrosopes
([Southeast University, School of Instrument Science and Engineering, Nanjing, CHINA]
[Beihang University, School of Instrumentation Science and Opto-electronic Engineering, Beijing, CHINA]

Robust Filtering of a MEMS-Based Gyro Cluster
Jyh-Ching Juang1, [G. Y. Huang]1, [T. Lin]1
([National Cheng Kung University, Department of Electrical Engineering, TAIWAN]
[National Space Organization, Hsin Chu, TAIWAN]

Very high-power and high stable Er-doped superfluorescent source for strategic-grade IFOG
Angela Moretti, S. Alidori
([GEIM elettronica, San Benedetto del Tronto (AP), ITALY]

Quality Factor Variation Measured in a Monolithic Fused Silica Cylindrical Resonator
(College of Optoelectronic Science and Engineering, National University of Defense Technology, Changsha, CHINA)
Wednesday, September 21, 2016

Session 5: Gyro Compassing / Northfinding  (Chairman: T. Löfler)
09:00  Orbital GyroCompass Evolution
Donald B. Reid
(Lockheed Martin Space Systems, San Jose, CA, USA)

09:30  Advances in Lightweight Precision North Finding and Positioning Inertial Systems
Jason Bias¹, [N. Mathur]², [R. Thorpe]³
¹“Night Vision & Electronic Sensors Directorate, Ground Combat Systems Division, Fort Belvoir, VA, USA
²Night Vision & Electronic Sensors Directorate, CACI, Fort Belvoir, VA, USA
³Soldier Precision Targeting Devices (PM SPTD), NCI, Fort Belvoir, VA, USA

Session 6: MEMS  (Chairman: G. F. Trommer)
10:00  Closed-loop MEMS accelerometer: from design to production
Boris Grinberg, A. Feingold, L. Koenigsberg
(Physical Logic Ltd., Petah Tikva, ISRAEL)

10:30  Coffee Break

11:00  First results with MEMS tilt sensors on bridges
Stefan König, P. Leinfelder
(Northrop Grumman LITEF GmbH, Dept. EAT, Freiburg, GERMANY)

Session 7: Integrated Systems  (Chairman: J. F. Wagner)
11:30  Aerodynamic Parameters Compensation in the SINS/AMM/GNSS Integrated Navigation System
Shen Jialiang, Zhu Xinhua, Wang Yu, Su Yan
(Nanjing University of Science and Technology, School of Mechanical Engineering, Nanjing, CHINA)

12:00  Mixed H2 / H∞ Filter for Automatic Aircraft Landing with Optical Sensors
Christian Torhäuser, P. Hecker
(technische Universität Braunschweig, Institute of Flight Guidance, Braunschweig, GERMANY)

12:30  Lunch Break (90min)

14:00  INS/GNSS/Odometer Data Fusion in Railway Applications
Christian Reimer, E. v. Hinüber
(IMAR Navigation GmbH, St. Ingbert, GERMANY)

Session 8: Signal Processing / Algorithms  (Chairman: E. v. Hinüber)
14:30  IndoorGuide – A Multi Sensor Pedestrian Navigation System for Precise and Robust Indoor Localization
Jan Ruppelt, Gert F. Trommer
(Institute of Systems Optimization (ITE), Karlsruher Institut für Technologie (KIT), Karlsruhe, GERMANY)

15:00  Coffee Break

15:30  Multiple model concepts in navigational applications
Michael Ger¹, [M. Westenkirchner, G. Herbold]², [C. van Ommeren]³
¹MBDA Deutschland GmbH, Schrobenhausen, GERMANY
²Technical University of Munich, München, GERMANY
³Institute of Space Technology and Space Applications, Munich, GERMANY

16:00  An Alternative Approach to Eliminate the Motion Induced Disturbances in Dead Reckoning Navigation
Yakov Binder, Yury Litmanovich, [T. Paderina]
(Concern CSRI Elektropribor, JSC, St. Petersburg, RUSSIA)

Alternate:

Magnetometer-Based Projectile Orientation Measurement
Jinhuayan You¹, [D. Li, H. Ye]², [F. Wu]³
¹China Academy of Engineering Physics, Institute of Electronic Engineering, Mianyang, CHINA
²Shanghai Institute of Spaceflight Control Technology, CHINA
³ITMO University, St. Petersburg, RUSSIA

Sensor Fusion for Land Vehicle Slope Estimation
Nicola Palella, [L. Colombo, F. Pisoni, G. Avellone]
(STMicroelectronics, Automotive Digital Division, Infotainment BU, Agrate Brianza (MB), ITALY)

Compensation of bias drift and thermal hysteresis based on temperature self-sensing in MEMS gyroscopes
Iakov Nekrasov¹, [R.G. Liukshonkov]², [R.G. Liukshonkov]³
¹Concern CSRI Elektropribor, JSC, The State Research Center of the Russian Federation, Saint Petersburg, RUSSIA
²ITMO University, St. Petersburg, RUSSIA
³Physical Logic Ltd., Petah Tikva, ISRAEL

Efficiency of the MEMS inertial sensors used in low-dynamics applications in low-gravity environment
Arkadiusz Szumski, B. Eissfeller
(Universität der Bundeswehr, Munich, Institute of Space Technology and Space Applications, Neubiberg, GERMANY)