2015 IEEE Metrology for Aerospace

(MetroAeroSpace 2015)

Benevento, Italy 4-5 June 2015



IEEE Catalog Number:

ISBN:

CFP1532W-POD 978-1-4799-7570-9

WORKSHOP PROGRAM

Thursday, June 4th

SS1 (Part 1): Special Session on Navigation Technologies and Related Applications

Room: Red Hall, Palazzo San Domenico

Chairs: Bingbo Cui, Southeast University, China

Antonio Paolozzi, Sapienza University of Rome and Centro Fermi, Italy

1 Quality assessment of LARES satellite ranging data

Erricos C. Pavlis, University of Maryland, US

Antonio Paolozzi, Sapienza University of Rome & Centro Fermi, Italy Claudio Paris, Sapienza University of Rome & Centro Fermi, Italy

Ignazio Ciufolini, University of Salento & Centro Fermi, Italy

Giampiero Sindoni, Sapienza University of Rome, Italy

6 Optimal Modeling on Magnetic Shielding Cylinder of Atomic Spin Gyroscope Considering Transverse Shielding Factor

Hong Zhang, Southeast University, China

Sheng Zou, Southeast University, China

Xi-Yuan Chen, Southeast University, China

9 Benefit of GNSS Multiconstellation in Position and Velocity Domain

Salvatore Gaglione, Parthenope University of Naples, Italy

Antonio Angrisano, Parthenope University of Naples, Italy

Pierluigi Freda, Parthenope University of Naples, Italy

Anna Innac, Parthenope University of Naples, Italy

Nicola Crocetto, Second University of Naples, Italy

Mario Vultaggio, Italian Institute of Navigation, Italy

15 Study on calibration method for tri-axial accelerometers

Caiping Lv, Southeast University, China

Xi-Yuan Chen, Southeast University, China

Haoqian Huang, Southeast University, China

Zhikai Zhou, Southeast University, China

21 Efficient ensemble modeling method of FOG thermal-induced errors based on EEMD and extreme learning machine

Bingbo Cui, Southeast University, China

Xi-Yuan Chen, Southeast University, China

Chuanye Tang, Southeast University, China

SS2: Special Session on Complex Systems Operational Availability: Measurements, Methodologies and Requirements

Room: Blue Hall, Palazzo San Domenico

Chairs: Fabio Leccese, University of Rome "Roma Tre", Italy

26 Operational Availability (Ao) of Warships

Angelo Dell'Isola, Orizzonte Sistemi Navali S.p.A., Italy Armando Vendittelli, Orizzonte Sistemi Navali S.p.A., Italy

33 The CoDeF structure: a way to evaluate Ai including failures caused by multiple minor degradations

Ruggero De Francesco, SeTeL s.r.l, Italy

Ettore De Francesco, SeTeL s.r.l, Italy

38 A Proposal to Update LSA Databases for an Operational Availability Based on Autonomic Logistic

Eduardo De Francesco, SeTeL s.r.l, Italy

Ettore De Francesco, SeTeL s.r.l, Italy

Ruggero De Francesco, SeTeL s.r.l, Italy

Fabio Leccese, University of Rome "Roma Tre", Italy

Marco Cagnetti, University of Rome "Roma Tre", Italy

44 Optimization of Availability Operation via simulated Prognostics

Roberto Paggi, ItalConsul s.r.l., Italy

Gian Luca Mariotti, ItalConsul s.r.l., Italy

Anna Paggi, ItalConsul s.r.l., Italy

Fabio Leccese, University of Rome "Roma Tre", Italy

49 Development on Aerospace Composite Structures Investigation using Thermography and Shearography in Comparison to Traditional NDT Methods

Giovanni De Angelis, Flight Test Centre - Chemistry Department, Italian Air Force, Italy

Enrico Dati, Flight Test Centre - Chemistry Department, Italian Air Force, Italy

Manuele Bernabei, Flight Test Centre - Chemistry Department, Italian Air Force, Italy

Fabio Leccese, University of Rome "Roma Tre", Italy

56 Improvement of Altitude Precision in Indoor and Urban Canyon Navigation for Small Flying Vehicles

Enrico Petritoli, University of Rome "Roma Tre", Italy

Fabio Leccese, University of Rome "Roma Tre", Italy

SS3 (Part 1): Special Session on Relativistic Metrology

Room: Library of Province of Benevento

Chairs: Roberto Peron, Institute for Space Astrophysics and Planetology, Italy Enrico Lorenzini, Center of Studies and Activities for Space (CISAS), Italy

61 A proposal for a test of Weak Equivalence Principle with improved accuracy using a cryogenic differential accelerometer installed on a pendulum

Valerio Antonio Iafolla, Institute for Space Astrophysics and Planetology, Italy

Emiliano Fiorenza, Institute for Space Astrophysics and Planetology, Italy

Carlo Lefevre, Institute for Space Astrophysics and Planetology, Italy

David M. Lucchesi, Institute for Space Astrophysics and Planetology, Italy

Marco Lucente, Institute for Space Astrophysics and Planetology, Italy

Carmelo Magnafico, Institute for Space Astrophysics and Planetology, Italy

Sergio Nozzoli, Institute for Space Astrophysics and Planetology, Italy

Roberto Peron, Institute for Space Astrophysics and Planetology, Italy

Francesco Santoli, Institute for Space Astrophysics and Planetology, Italy

Enrico Lorenzini, University of Padova, Italy

Vadim Milyukov, Moscow University, Russia

Irwin I. Shapiro, HarvardSmithsonian Center for Astrophysics, US

Sheldon Glashow, Boston University, US

66 Orbital predictions for the LARES satellite mission

Giampiero Sindoni, Sapienza University of Rome, Italy

Erricos C. Pavlis, University of Maryland, US

Antonio Paolozzi, Sapienza University of Rome & Centro Fermi, Italy

Claudio Paris, Sapienza University of Rome & Centro Fermi, Italy

Ignazio Ciufolini, University of Salento & Centro Fermi, Italy

71 Fundamental physics in the Field of the Earth with the LAser RAnged Satellites Experiment (LARASE)

David M. Lucchesi, Institute for Space Astrophysics and Planetology, Italy

Roberto Peron, Institute for Space Astrophysics and Planetology, Italy

Massimo Visco, Institute for Space Astrophysics and Planetology, Italy

Luciano Anselmo, National Research Council, Italy

Carmen Pardini, National Research Council, Italy

Massimo Bassan, University of Tor Vergata & INFN, Italy

Giuseppe Pucacco, University of Tor Vergata & INFN, Italy

77 Laser Ranging Positioning Metrology for Galileo and the Moon

Manuele Martini, INFN, Italy

Simone Dell'Agnello, INFN, Italy

Giovanni Delle Monache, INFN, Italy

Roberto Vittori, INFN, Italy

Alessandro Boni, INFN, Italy

Claudio Cantone, INFN, Italy

Emanuele Ciocci, INFN, Italy

Giordano Patrizi, INFN, Italy

Mattia Tibuzzi, INFN, Italy

Nicola Intaglietta, INFN, Italy

Lorenzo Salvatori, INFN, Italy

Caterina Lops, INFN, Italy

Stefania Contessa, INFN, Italy

Luca Porcelli, INFN, Italy

Chiara Mondaini, INFN, Italy

Paolo Tuscano, INFN, Italy

Mauro Maiello, INFN, Italy

Douglas Currie, University of Maryland, US & INFN, Italy

John F. Chandler, Center for Astrophysics, US

Giuseppe Bianco, Italian Space Agency & INFN, Italy

82 Spacecraft design impacts on the post-Newtonian parameter estimation

Anja Katharina Schuster, Technical University of Darmstadt, Germany Rüdiger Jehn, European Space Operations Center, Germany Elsa Montagnon, European Space Operations Center, Germany

SS1 (Part 2): Special Session on Navigation Technologies and Related Applications

Room: Red Hall, Palazzo San Domenico

Chairs: Bingbo Cui, Southeast University, China Ferdinando Dolce, Italian Air Force, Italy

88 Experimental Activity for 3D Coordinates Mensuration from COSMO-SkyMed SAR Data through Radargrammetry: Technique and Methodology

Andrea Cecchini, Italian Air Force, Italy

Jacopo Paoli, Italian Air Force, Italy

Luigi Caravita, Italian Air Force, Italy

Ferdinando Dolce, Italian Air Force, Italy

Emanuele Nerla, Joint Center for Satellite Remote Sensing, Italy

Maurizio Monteleone, Aeronautical Geo-Topographic Information Center, Italy

93 A novel hybrid algorithm of split-radix fast Fourier transform and unscented Kalman filter for navigation information estimation

Haoqian Huang, Southeast University, China

Xi-Yuan Chen, Southeast University, China

Caiping Lv, Southeast University, China

Zhikai Zhou, Southeast University, China

The Horizon 2020 DEMETRA project: DEMonstrator of EGNSS services based on Time Reference Architecture

Patrizia Tavella, National Institute of Metrological Research, Italy

Ilaria Sesia, National Institute of Metrological Research, Italy

Giancarlo Cerretto, National Institute of Metrological Research, Italy

Giovanna Signorile, National Institute of Metrological Research, Italy

Davide Calonico, National Institute of Metrological Research, Italy

Elena Cantoni, National Institute of Metrological Research, Italy

Concetta De Stefano, National Institute of Metrological Research, Italy

Valerio Formichella, National Institute of Metrological Research, Italy

Roberto Costa, National Institute of Metrological Research, Italy

Paolo Cerabolini, ANTARES, Italy

Lucia Rotiroti, ANTARES, Italy

Antonella Simonetti, ANTARES, Italy

Alberto Colombo, ANTARES, Italy

Pascale Defraigne, Observatoire Royal de Belgique, Belgium

Nilufer Ozdemir, Observatoire Royal de Belgique, Belgium

Marc Gandara, Thales Alenia Space France, France

Pierre-Louis Puech, Thales Alenia Space France, France

Vincent Hamoniaux, Thales Alenia Space France, France

Enrico Varriale, Thales Alenia Space Italy, Italy

Ouirino Morante, Thales Alenia Space Italy, Italy

Tomasz Widomski, ELPROMA, Poland

Jan Kaczmarek, ELPROMA, Poland

Janusz Uzycki, ELPROMA, Poland

Krzysztof Borgulski, ELPROMA, Poland

Piotr Olbrysz, ELPROMA, Poland

Jerzy Kowalski, ELPROMA, Poland Alice Cernigliaro, AIZOON, Italy

Franco Fiasca, AIZOON, Italy

Andrea Perucca, AIZOON, Italy

Andrea Samperi, AIZOON, Italy

Viney Dhiri, Telespazio VEGA UK Ltd, United Kingdom

Eleonora Giulianini, Telespazio VEGA UK Ltd, United Kingdom

Maria Teresa Veiga, DEIMOS, Spain

Tomás Suárez, DEIMOS, Spain

Marco Mangiantini, METEC, Italy

Anders Wallin, MIKES Metrology, Finland

Lorenzo Galleani, Politecnico di Torino, Italy

David Hindley, National Physical Laboratory, United Kingdom

103 Inter system bias: Stability and Impact on Multi-constellation Positioning

Ciro Gioia, Piksel S.p.A., Italy

Salvatore Gaglione, Parthenope University of Naples, Italy

Daniele Borio, European Commission, Joint Research Centre

SS4: Special Session on Aerospace Photonics Sensors

Room: Blue Hall, Palazzo San Domenico

Chairs: Graham Wild, RMIT University, Australia

Matthew Marino, RMIT University, Australia

109 Thermo-mechanical design of the optical head for MAJIS experiment

Diego Scaccabarozzi, Politecnico di Milano, Italy

Bortolino Saggin, Politecnico di Milano, Italy

Marianna Magni, Politecnico di Milano, Italy

Roberto Panzeri, Politecnico di Milano, Italy

Marco Tarabini, Politecnico di Milano, Italy

Giuseppe Piccioni, Institute for Space Astrophysics and Planetology, Italy

114 Development of Integrated Vibratory-Gyroscopes Based on Photonic Bandgap Materials

Carlo Trigona, University of Catania, Italy

Bruno Andò, University of Catania, Italy

Salvatore Baglio, University of Catania, Italy

118 Blade tip clearance and time of arrival immediate measurement method using an optic probe

Jose Miguel Gil-García, University of the Basque Country UPV/EHU, Spain

Iker García, University of the Basque Country UPV/EHU, Spain

Joseba Zubia, University of the Basque Country UPV/EHU, Spain

Gerardo Aranguren, University of the Basque Country UPV/EHU, Spain

123 Optimising the Design of a Pressure Transducer for Aircraft Altitude Measurement using Optical Fibre Bragg Grating Sensors

Graham Wild, RMIT University, Australia

129 Novel Photonics Sensing and Systems for Military Metrology

Graham Wild, RMIT University, Australia

SS3 (Part 2): Special Session on Relativistic Metrology

Room: Library of Province of Benevento

Chairs: Roberto Peron, Institute for Space Astrophysics and Planetology, Italy

Enrico Lorenzini, Center of Studies and Activities for Space (CISAS), Italy

135 Testing general relativity during the cruise phase of the BepiColombo mission to Mercury

Luigi Imperi, Sapienza University of Rome, Italy

Luciano Iess, Sapienza University of Rome, Italy

141 The relativity experiment of MORE: global full-cycle simulation and results

Giulia Schettino, University of Pisa, Italy

Stefano Cicalò, SpaceDyS s.r.l., Italy

Sara Di Ruzza, SpaceDyS s.r.l., Italy

Giacomo Tommei, University of Pisa, Italy

146 GALILEO with high eccentricity and equipped by Accelerometers: a tool for GR experiments

Francesco Vespe, Italian Space Agency, Italy

150 Pure gravitational orbits of GNSS - the tool for the relativistic space geodesy

Janusz B. Zieliński, Institute of Navigation, Airforce Academy, Poland

SS5: Special Session on Measurement for Improving Quality, Reliability And Safety in Aerospace Applications

Room: Red Hall, Palazzo San Domenico

Chairs: Marcantonio Catelani, University of Florence, Italy

Lorenzo Ciani, University of Florence, Italy

155 Spacecraft autonomy and reliability in MTG satellite via On-board Control Procedures

Massimo Tipaldi, Compagnia Generale per lo Spazio & University of Sannio, Italy

Massimo Ferraguto, Space Systems Finland Ltd., Finland

Tiago Ogando, Space Systems Finland Ltd., Finland

Gianluigi Camatto, Compagnia Generale per lo Spazio, Italy

Tim Wittrock, indi-IT GmbH, Germany

Bernhard Bruenjes, OHB System AG, Germany

Luigi Glielmo, University of Sannio, Italy

160 Thermovacuum Tests on TIGRIsat structure

Claudio Paris, Sapienza University of Rome and Centro Fermi, Italy Maurizio Parisse, Sapienza University of Rome, Italy Whatiq Aziz Allawi, Ministry of Science and Technology, Iraq

166 GPS/Barometer augmented navigation system: integration and integrity monitoring

Salvatore Gaglione, Parthenope University of Naples, Italy Antonio Angrisano, Parthenope University of Naples, Italy Gaetano Castaldo, Parthenope University of Naples, Italy Ciro Gioia, Parthenope University of Naples, Italy Anna Innac, Parthenope University of Naples, Italy Luigi Perrotta, Parthenope University of Naples, Italy Giuseppe Del Core, Parthenope University of Naples, Italy Salvatore Troisi, Parthenope University of Naples, Italy

172 Haptic Touchscreen Display for Avionics: demonstrator characterization measurements

Marcantonio Catelani, University of Florence, Italy Lorenzo Ciani, University of Florence, Italy Giovanni Barile, Sirio Panel S.p.A., Italy Fabio Liberatori, Sirio Panel S.p.A., Italy

SS6: Special Session on Non Destructive Testing and Evaluation for Aerospace

Room: Blue Hall, Palazzo San Domenico

Chairs: Helena G. Ramos, University of Lisboa, Portugal
Marco Laracca, University of Cassino and Southern Lazio, Italy

177 Lock-In Termography for Investigation of Impact Damage in Hybrid Polypropylene/Glass Composites

Simone Boccardi, University of Naples Federico II, Italy

Giovanni Maria Carlomagno, University of Naples Federico II, Italy

Carosena Meola, University of Naples Federico II, Italy

Domenico Acierno, Reference Centre for Processing Technology of Polymers and Composites, Italy

Giorgio Simeoli, University of Naples Federico II, Italy

Salvatore Iannace, National Research Council, Italy

Luigi Sorrentino, National Research Council, Italy

Pietro Russo, National Research Council, Italy

182 Analysis of the influence of lift-off variation on Eddy-Current images

Marco Ricci, University of Perugia, Italy

Giuseppe Silipigni, University of Perugia, Italy

Luigi Ferrigno, University of Cassino and Southern Lazio, Italy

Marco Laracca, University of Cassino and Southern Lazio, Italy

Ibukun Dapo Adewale, University of Perugia, Italy & Newcastle University, UK

Gui Yun Tian, Newcastle University, UK

188 The Filtering Effect of the Tikhonov Regularization

Artur Lopes Ribeiro, University of Lisboa, Portugal Dario Pasadas, University of Lisboa, Portugal Helena G. Ramos, University of Lisboa, Portugal Tiago Rocha, University of Lisboa, Portugal

SS3 (Part 3): Special Session on Relativistic Metrology

Room: Library of Province of Benevento

Chairs: Roberto Peron, Institute for Space Astrophysics and Planetology, Italy Enrico Lorenzini, Center of Studies and Activities for Space (CISAS), Italy

193 An Autonomous Reference Frame for Relativistic Positioning System

Uros Kostic, University of Ljubljana, Slovenia Martin Horvat, University of Ljubljana, Slovenia Andreja Gomboc, University of Ljubljana, Slovenia

198 On geodesic deviation in Schwarzschild spacetime

Dennis Philipp, University of Bremen, Germany Volker Perlick, University of Bremen, Germany Claus Lämmerzahl, University of Bremen, Germany Kaustubh Deshpande, University of Bremen, Germany

204 Time and frequency optical fiber links for space metrology

Davide Calonico, National Institute of Metrological Research, Italy
Cecilia Clivati, National Institute of Metrological Research, Italy
Matteo Frittelli, National Institute of Metrological Research, Italy
Alberto Mura, National Institute of Metrological Research, Italy
Massimo Zucco, National Institute of Metrological Research, Italy
Filippo Levi, National Institute of Metrological Research, Italy
Federico Perini, Radiotelescopi di Medicina INAF, Istituto di Radioastronomia, Italy
Claudio Bortolotti, Radiotelescopi di Medicina INAF, Istituto di Radioastronomia, Italy
Mauro Roma, Radiotelescopi di Medicina INAF, Istituto di Radioastronomia, Italy
Roberto Ambrosini, Radiotelescopi di Medicina INAF, Istituto di Radioastronomia, Italy
Giovanni Antonio Costanzo, Politecnico di Torino, Italy

209 Switching times in Fabry-Perot Measurements

Giovanni Filatrella, University of Sannio, Italy Paolo Addesso, University of Salerno, Italy Vincenzo Pierro, University of Sannio, Italy

Friday, June 5th

SS7: Special Session on Wave Chaos Metrology and Modeling in EMC and Acoustics

Room: Red Hall, Palazzo San Domenico

Chairs: Innocenzo M. Pinto, University of Sannio, Italy Olivier Legrand, University of Nice Sophia Antipolis, France

214 Application of the Random Coupling Model to Lossy Ports in Complex Enclosures

Bisrat D. Addissie, University of Maryland, US John C. Rodgers, University of Maryland, US Thomas M. Antonsen, University of Maryland, US

220 Measurement and Analysis of Electromagnetic Field-Field Correlation Functions

Gabriele Gradoni, University of Nottingham, United Kingdom Stephen C. Creagh, University of Nottingham, United Kingdom Gregor Tanner, University of Nottingham, United Kingdom Christopher Smartt, University of Nottingham, United Kingdom Mohd Hafiz Baharuddin, University of Nottingham, United Kingdom David Thomas, University of Nottingham, United Kingdom

225 Universal Intensity Statistics in a Chaotic Reverberation Chamber to Refine the Criterion of Statistical Field Uniformity

J.-B. Gros, University of Nice Sophia Antipolis, France

U. Kuhl, University of Nice Sophia Antipolis, France

O. Legrand, University of Nice Sophia Antipolis, France

F. Mortessagne, University of Nice Sophia Antipolis, France

E. Richalot, Université Paris-Est, France

230 Probability Density Function for the Quality Factor of Vibrating Reverberation Chambers

Giuseppe Ferrara, University of Naples Parthenope, Italy Angelo Gifuni, University of Naples Parthenope, Italy Maurizio Migliaccio, University of Naples Parthenope, Italy Antonio Sorrentino, University of Naples Parthenope, Italy

235 Three-Dimensional Polarimetry for Wave Chaos Description

Maurizio Migliaccio, University of Naples Parthenope, Italy Josè J. Gil, University of Zaragoza, Spain Antonio Sorrentino, University of Naples Parthenope, Italy Ferdinando Nunziata, University of Naples Parthenope, Italy Giuseppe Ferrara, University of Naples Parthenope, Italy

SS8: Special Session on Systems and Measurements for Aerial Vehicles, Intelligent Transportation and Automatic (online) Inspection

Room: Blue Hall, Palazzo San Domenico

Chairs: Francesco Adamo, Politecnico di Bari, Italy Maurizio Spadavecchia, Politecnico di Bari, Italy

240 Space-aided Autonomous Sensor System for Hydrogeological Disaster Management

Francesco Fedi, Selex ES, Italy Sabino Cacucci. Selex ES. Italy

245 An IoT-based measurement system for aerial vehicles

Savio Sciancalepore, Politecnico di Bari, Italy Giuseppe Piro, Politecnico di Bari, Italy Francesco Bruni, Politecnico di Bari, Italy Enrico Nasca, Politecnico di Bari, Italy Gennaro Boggia, Politecnico di Bari, Italy Luigi Alfredo Grieco, Politecnico di Bari, Italy

251 Ionospheric Incremental Delay Models in Railway Applications

Pietro Salvatori, University of Rome "Roma Tre", Italy Cosimo Stallo, RadioLabs Consortium, Italy Alessandro Neri, RadioLabs Consortium, Italy Francesco Rispoli, Ansaldo STS, Italy

256 DLC Integrated GHz Antenna for Aerospace

Grazia Cicala, National Research Council, Italy Alessandro Massaro, National Research Council, Italy Luciano Velardi, National Research Council, Italy Antonio Valentini, University of Bari, Italy Francesco Adamo, Politecnico di Bari, Italy Filippo Attivissimo, Politecnico di Bari, Italy

261 Automatic Diagnostic by Using a New Optical Sensor

Nicola Ivan Giannoccaro, University of Salento, Italy Luigi Spedicato, University of Salento, Italy Aimè Lay-Ekuakille, University of Salento, Italy Alessandro Massaro, Italian Institute of Technology IIT, Italy

SS9 (Part 1): Special Session on Measurement and Instrumentation for Aerospace Application

Room: Library of Province of Benevento

Chairs: Marco Pertile, Center of Studies and Activities for Space (CISAS), Italy Enrico Lorenzini, Center of Studies and Activities for Space (CISAS), Italy

265 A geometric method for estimating space debris center of mass position and orbital parameters from features tracking

Gabriele Biondi, Politecnico di Torino, Italy Stefano Mauro, Politecnico di Torino, Italy Tharek Mohtar, Politecnico di Torino, Italy Stefano Pastorelli, Politecnico di Torino, Italy Massimo Sorli, Politecnico di Torino, Italy

271 Multiphysic modelling of MarsTEM shield

Sebastiano Chiodini, Center of Studies and Activities for Space (CISAS), Italy Giacomo Colombatti, Center of Studies and Activities for Space (CISAS), Italy Enrico Friso, Center of Studies and Activities for Space (CISAS), Italy Marco Pertile, Center of Studies and Activities for Space (CISAS), Italy Stefano Debei, Center of Studies and Activities for Space (CISAS), Italy

277 In-Flight Calibration of Magnetometer and Attitude Determination System for Land-survey Mini-satellite

Yevgeny Somov, Samara State Technical University, Russia Sergey Butyrin, Samara State Technical University, Russia Chingiz Hajiyev, Istanbul Technical University, Turkey

283 Uncertainty evaluation of a vision system for pose measurement of a spacecraft with fiducial markers

Marco Pertile, Center of Studies and Activities for Space (CISAS), Italy
Mattia Mazzucato, Center of Studies and Activities for Space (CISAS), Italy
Luca Bottaro, Center of Studies and Activities for Space (CISAS), Italy
Sebastiano Chiodini, Center of Studies and Activities for Space (CISAS), Italy
Stefano Debei, Center of Studies and Activities for Space (CISAS), Italy
Enrico Lorenzini, Center of Studies and Activities for Space (CISAS), Italy

Poster Session

Room: Palazzo San Domenico

Chairs: Lorenzo Ciani, University of Florence, Italy Francesco Lamonaca (University of Calabria, Italy)

289 Hail detection in Naples urban area using singlepolaritazion X-band weather radar: preliminary results

Vincenzo Capozzi, University of Naples "Parthenope", Italy Vincenzo Mazzarella, University of Naples "Parthenope", Italy Marzia Moccia, University of Naples "Parthenope", Italy Giorgio Budillon, University of Naples "Parthenope", Italy Errico Picciotti, University of l'Aquila, Italy Frank S. Marzano, University of l'Aquila, Italy

295 Icing Hazard for Civil Aviation

Piercesare Bernabò, University of Pisa, Italy Fabrizio Cuccoli, National Laboratory of Radar and Surveillance Systems CNIT, Italy Luca Baldini, ISAC - National Research Council, Italy

301 Detection and forecast of convective clouds using MSG data for aviation support

Valeria Rillo, CMCC, Euro-Mediterranean Centre for Climate Change, Italy

Alessandra Lucia Zollo, Euro-Mediterranean Centre on Climate Change & Italian Aerospace Research Center, Italy

Paola Mercogliano, Euro-Mediterranean Centre on Climate Change & Italian Aerospace Research Center, Italy

Carmela Galdi, University of Sannio, Italy

306 Metrology for drone and drone for metrology: measurement systems on small civilian drones

Pasquale Daponte, University of Sannio, Italy Luca De Vito, University of Sannio, Italy Gianluca Mazzilli, University of Sannio, Italy Francesco Picariello, University of Sannio, Italy Sergio Rapuano, University of Sannio, Italy Maria Riccio, University of Sannio, Italy

312 On-Ground Actuator Calibration for ISA - BepiColombo

Marco Pisani, National Institute of Metrological Research, Italy
Milena Astrua, National Institute of Metrological Research, Italy
Valerio Antonio Iafolla, Institute for Space Astrophysics and Planetology, Italy
Francesco Santoli, Institute for Space Astrophysics and Planetology, Italy
David Lucchesi, Institute for Space Astrophysics and Planetology, Italy
Carlo Lefevre, Institute for Space Astrophysics and Planetology, Italy
Marco Lucente, Institute for Space Astrophysics and Planetology, Italy

318 LED-based field radiometer for sensor web in-situ measurements

Emanuele Taralli, National Institute of Metrological Research, Italy Roberto Filippo, National Institute of Metrological Research, Italy Giorgio Brida, National Institute of Metrological Research, Italy Mauro Rajteri, National Institute of Metrological Research, Italy Simon R.G. Hall, Optical Measurement Group NPL, UK Agnieszka Bialek, Optical Measurement Group NPL, UK Claire Greenwell, Optical Measurement Group NPL, UK Nigel Fox, Optical Measurement Group NPL, UK

323 On the BepiColombo and Juno Radio Science Experiments: precise models and critical estimates

Giacomo Tommei, University of Pisa, Italy Fabrizio De Marchi, University of Pisa, Italy Daniele Serra, University of Pisa, Italy Giulia Schettino, University of Pisa, Italy

329 Metrology for AGP - Astrometric Gravitation Probe

Mario Gai, National Institute of Astrophysics, Osserv. Astrofisico di Torino (OATo), Italy Alberto Vecchiato, National Institute of Astrophysics, Osserv. Astrofisico di Torino (OATo), Italy Deborah Busonero, National Institute of Astrophysics, Osserv. Astrofisico di Torino (OATo), Italy Alberto Riva, National Institute of Astrophysics, Osserv. Astrofisico di Torino (OATo), Italy Mario Gilberto Lattanzi, National Institute of Astrophysics, Osserv. Astrofisico di Torino (OATo), Italy Marco Pisani, National Institute of Metrological Research, Italy

335 Evaluation of Crack Depth Using Eddy Current Techniques with GMR-based Probes

Helena G. Ramos, University of Lisboa, Portugal Ruben Filipe Menezes, University of Lisboa, Portugal Artur Lopes Ribeiro, University of Lisboa, Portugal

341 Fast 2D crack profile reconstruction by image processing for Eddy-Current Testing

Giovanni Betta, University of Cassino and Southern Lazio, Italy Luigi Ferrigno, University of Cassino and Southern Lazio, Italy Marco Laracca, University of Cassino and Southern Lazio, Italy Helena G. Ramos, University of Lisboa, Portugal Marco Ricci, University of Perugia, Italy Artur Lopes Ribeiro, University of Lisboa, Portugal Giuseppe Silipigni, University of Perugia, Italy

346 Design of Sonar Sensor Model for Safe Landing of an UAV

Umberto Papa, University of Naples "Parthenope", Italy Giuseppe Del Core, University of Naples "Parthenope", Italy

351 The engineering and assembly of a low cost UAV

Domenica Costantino, Politecnico di Bari, Italy Maria Giuseppa Angelini, Politecnico di Bari, Italy Gabriele Vozza, Politecnico di Bari, Italy

356 Safety Improvement of Fixed Wing mini-UAV Based on Handy FDI Current Sensor and a Fail-Safe Configuration of Control Surface Actuators

Giuseppe Fuggetti, University of Bologna, Italy Antonio Ghetti, University of Bologna, Italy Matteo Zanzi, University of Bologna, Italy

362 Operational Flow of Twin Satellite Mission

Kamal Lamichhane, Nitte Meenakshi Institute of Technology, India

Kiran M, Nitte Meenakshi Institute of Technology, India

Kannan T, Nitte Meenakshi Institute of Technology, India

Divyanshu Sahay, Nitte Meenakshi Institute of Technology, India

S Sandya, Nitte Meenakshi Institute of Technology, India

367 Modeling and Filter Algorithm Analysis of All-Optical Atomic Spin Gyroscope's Random Drift

Sheng Zou, Southeast University, China

Hong Zhang, Southeast University, China

Xi-Yuan Chen, Southeast University, China

372 Extended Coning Algorithms for Angular Rate Input

Chuan Y. Tang, Southeast University, China

Xi-Yuan Chen, Southeast University, China

Bingbo Cui, Southeast University, China

378 4D-8PSK Trellis Coded Modulation: Implementation on Xilinx Virtex-6 FPGA

Pia Addabbo, University of Sannio, Italy

Tiziana Beltramonte, University of Sannio, Italy

Maurizio di Bisceglie, University of Sannio, Italy

Carmela Galdi, University of Sannio, Italy

Generoso Giangregorio, University of Sannio, Italy

Silvia Liberata Ullo, University of Sannio, Italy

384 The Pulsed Optically Pumped Rb frequency standard: a Proposal for a Space Atomic Clock

Salvatore Micalizio, National Institute of Metrological Research, Italy

Aldo Godone, National Institute of Metrological Research, Italy

Filippo Levi, National Institute of Metrological Research, Italy

Claudio Eligio Calosso, National Institute of Metrological Research, Italy

Bruno Andrea François, National Institute of Metrological Research, Italy

Alberto Battisti, Selex-ES, Italy

Marina Gioia, Selex-ES, Italy

Aurelio Borella, Selex-ES, Italy

389 Low-cost relative navigation sensors for miniature spacecraft and drones

Francesco Sansone, University of Padova, Italy

Alessandro Francesconi, University of Padova, Italy

Lorenzo Olivieri, Center of Studies and Activities for Space (CISAS), Italy

Francesco Branz, Center of Studies and Activities for Space (CISAS), Italy

395 Particle Filter Based Multi-Sensor Data Fusion Techniques for RPAS Navigation and Guidance

Francesco Cappello, RMIT University, Australia

Roberto Sabatini, RMIT University, Australia

Subramanian Ramasamy, RMIT University, Australia

Matthew Marino, RMIT University, Australia

401 A multi-antenna approach for UAV's attitude determination

Angelo Consoli, Eclexys Sagl, Switzerland

Jaouhar Ayadi, Eclexys Sagl, Switzerland

Germano Bianchi, National Institute for Astrophysics - IRA, Italy

Salvatore Pluchino, National Institute for Astrophysics - IRA, Italy

Francesco Piazza, Saphyrion Sagl, Switzerland

Rami Baddour, Saphyrion Sagl, Switzerland

M. Eulàlia Parés, CTTC, Spain

José Navarro, CTTC, Spain

Ismael Colomina, CTTC, Spain

Atilio Gameiro, Brightcom Ida, Portugal

Vassileios Tsetsos, Mobics SA, Greece

Odysseas Sekkas, Mobics SA, Greece

Theodoros Gatsos, Mobics SA, Greece

Roberto Navoni, Laser Navigation srl, Italy

406 Shape-based defect classification for Non Destructive Testing

Gianni D'Angelo, University of Sannio, Italy Salvatore Rampone, University of Sannio, Italy

411 Integration of satellite observations and ground-based measurements for landfill monitoring

Pia Addabbo, University of Sannio, Italy

Maurizio di Bisceglie, University of Sannio, Italy

Mariano Focareta, Mediterranean Agency for Remote Sensing and Environmental Control (MARSec), Italy Carmine Maffei, Mediterranean Agency for Remote Sensing and Environmental Control (MARSec), Italy Silvia Liberata Ullo, University of Sannio, Italy

416 Analysis of autogyro rotor balancing and vibration

Darius Vainilavicius, Kaunas University of Technology, Lithuania Vygantas Augutis, Kaunas University of Technology, Lithuania Marius Malcius, Kaunas University of Technology, Lithuania

Aurimas Bezaras, Birdmanas Ltd., Lithuania

421 Environmental tests and Optical measurements in the validation process of TFT-LCD for avionics applications

Marcantonio Catelani, University of Florence, Italy

Lorenzo Ciani, University of Florence, Italy

Matteo Venzi, University of Florence, Italy

Giovanni Barile, Sirio Panel S.p.A., Italy

426 A Markovian based approach for autonomous space systems

Massimo Tipaldi, Compagnia Generale per lo Spazio & University of Sannio, Italy Luigi Glielmo, University of Sannio, Italy

431 Integrated Measurement System for UAV

Jacek Pieniążek, Rzeszow University of Technology, Poland Piotr Cieciński, Rzeszow University of Technology, Poland Łukasz Wałek, Rzeszow University of Technology, Poland Dariusz Nowak, Rzeszow University of Technology, Poland

437 A mechanical mode-stirred reverberation chamber inspired by chaotic cavities

Franco Moglie, Marche Polytechnic University, Italy

Gabriele Gradoni, University of Nottingham, United Kingdom

Luca Bastianelli, Marche Polytechnic University, Italy

Valter Mariani Primiani, Marche Polytechnic University, Italy

442 Guidance Law Recognition of Target Pursuing Vehicle

Runle Du, National Key Laboratory of Science and Technology on Test Physics and Numerical Mathematics, China

Jiaqi Liu, National Key Laboratory of Science and Technology on Test Physics and Numerical Mathematics, China

Zhifeng Li, National Key Laboratory of Science and Technology on Test Physics and Numerical Mathematics, China

Zhenhong Niu, National Key Laboratory of Science and Technology on Test Physics and Numerical Mathematics, China

SS10: Special Session on Meteorological Sensors and Sensor Systems for Flight Support

Room: Red Hall, Palazzo San Domenico

Chairs: Paola Mercogliano, CIRA, Italian Aerospace Research Centre, Italy Carmela Galdi, University of Sannio, Italy

448 Short Range Fog Forecasting by applying Data Mining Techniques

Gaetano Zazzaro, CIRA, Italian Aerospace Research Centre, Italy

Gianpaolo Romano, CIRA, Italian Aerospace Research Centre, Italy

Paola Mercogliano, CIRA, Italian Aerospace Research Centre, Italy

Valeria Rillo, CMCC, Euro-Mediterranean Centre for Climate Change, Italy

Sebastian Kauczok, Selex ES GmbH, Germany

454 Aircraft hazard evaluation for critical weather avoidance

Francesco Sermi, National Laboratory of Radar and Surveillance Systems CNIT, Italy Fabrizio Cuccoli, National Laboratory of Radar and Surveillance Systems CNIT, Italy Clio Mugnai, National Laboratory of Radar and Surveillance Systems CNIT, Italy Luca Facheris, University of Florence, Italy

460 Precipitation nowcasting using the satellite product Multi-Sensor Precipitation Estimate

Alessandra Lucia Zollo, Euro-Mediterranean Centre on Climate Change & Italian Aerospace Research Center. Italy

Maria Paola Manzi, CMCC, Euro-Mediterranean Centre for Climate Change, Italy

Paola Mercogliano, Euro-Mediterranean Centre on Climate Change & Italian Aerospace Research Center, Italy

Carmela Galdi, University of Sannio, Italy

466 Aviation weather awareness: development of algorithms for the detection of weather hazard through the use of EUMETSAT products

Alessandra Lucia Zollo, Euro-Mediterranean Centre on Climate Change & Italian Aerospace Research Center, Italy

Maria Paola Manzi, CMCC, Euro-Mediterranean Centre for Climate Change, Italy

Paola Mercogliano, Euro-Mediterranean Centre on Climate Change & Italian Aerospace Research Center, Italy

Carmela Galdi, University of Sannio, Italy

SS11 (Part 1): Special Session on Sensors, Measurements, and Information Fusion for Air Space Security and Defense

Room: Blue Hall, Palazzo San Domenico

Chairs: Domenico Accardo, University of Naples Federico II, Italy Leopoldo Angrisani, University of Naples Federico II, Italy

472 Infrared Signature - Theory and example of practical measurement methods

Francesco Soldani, Italian Air Force, Italy

479 i-TEAMS: Cooperative GNC for small UAV formations

Amedeo Rodi Vetrella, University of Naples Federico II, Italy Giancarmine Fasano, University of Naples Federico II, Italy Domenico Accardo, University of Naples Federico II, Italy

485 The quadruple image multi-band sensor

Marcella Iuzzolino, University of Naples Federico II, Italy Giancarlo Rufino, University of Naples Federico II, Italy Domenico Accardo, University of Naples Federico II, Italy Ernesto Oliva, INAF - Osservatorio Astrofisico di Arcetri, Italy Andrea Tozzi, INAF - Osservatorio Astrofisico di Arcetri, Italy

SS9 (Part 2): Special Session on Measurement and Instrumentation for Aerospace Application Room: Library of Province of Benevento

Chairs: Marco Pertile, Center of Studies and Activities for Space (CISAS), Italy Enrico Lorenzini, Center of Studies and Activities for Space (CISAS), Italy

491 Large Space Debris Pose Acquisition in Close-Proximity Operations

Roberto Opromolla, University of Naples Federico II, Italy Giancarmine Fasano, University of Naples Federico II, Italy Giancarlo Rufino, University of Naples Federico II, Italy Michele Grassi, University of Naples Federico II, Italy

497 A new Hyperspectral Camera concept for space-borne application

Marco Pisani, National Institute of Metrological Research, Italy Massimo Zucco, National Institute of Metrological Research, Italy Demetrio Labate, Selex ES - Space LoB, Italy Marco Molina, Selex ES - Space LoB, Italy

502 MicroMIMA, a miniaturized spectrometer for planetary observation

Bortolino Saggin, Politecnico di Milano, Italy
Diego Scaccabarozzi, Politecnico di Milano, Italy
Irina Shatalina, Politecnico di Milano, Italy
Roberto Panzeri, Politecnico di Milano, Italy
Marco Tarabini, Politecnico di Milano, Italy
Marianna Magni, Politecnico di Milano, Italy
Giancarlo Bellucci, Institute for Space Astrophysics and Planetology, Italy

507 The effects of tube deformities on the dynamic calibration of a tubing system

Matthew Marino, RMIT University, Australia Alex Fisher, RMIT University, Australia Roberto Sabatini, RMIT University, Australia

513 Echo Simulator Systems For Exomars 2016 Radar Doppler Altimeters Tests

Giuseppe Cirillo, CO.RI.S.T.A., COnsorzio di RIcerca su Sistemi di Telerilevamento Avanzati, Italy Massimo Gagliardi, CO.RI.S.T.A., COnsorzio di RIcerca su Sistemi di Telerilevamento Avanzati, Italy Gianfranco Palmese, CO.RI.S.T.A., COnsorzio di RIcerca su Sistemi di Telerilevamento Avanzati, Italy Dario Califano, CO.RI.S.T.A., COnsorzio di RIcerca su Sistemi di Telerilevamento Avanzati, Italy Luca Ciofaniello, CO.RI.S.T.A., COnsorzio di RIcerca su Sistemi di Telerilevamento Avanzati, Italy Raffaello Davide Laiso, CO.RI.S.T.A., COnsorzio di RIcerca su Sistemi di Telerilevamento Avanzati, Italy Marco Bortone, CO.RI.S.T.A., COnsorzio di RIcerca su Sistemi di Telerilevamento Avanzati, Italy Maria Rosaria Santovito, CO.RI.S.T.A., COnsorzio di RIcerca su Sistemi di Telerilevamento Avanzati, Italy Giovanni Alberti, CO.RI.S.T.A., COnsorzio di RIcerca su Sistemi di Telerilevamento Avanzati, Italy Stefania Mattei, CO.RI.S.T.A., COnsorzio di RIcerca su Sistemi di Telerilevamento Avanzati, Italy Pasquale Pepe, Thales Alenia Space Italia, Italy

Session on Advanced Measurement Systems and Sensors for Aerospace

Room: Red Hall, Palazzo San Domenico

Chairs: Alfonso Farina, IEEE BoG AESS VP for Industry Relations, CTIF Industry Advisory Chair Sergio Rapuano, University of Sannio, Italy

519 Attitude and Position Estimation for an UAV Swarm using Consensus Kalman Filtering

Egidio D'Amato, Second University of Naples, Italy Immacolata Notaro, Second University of Naples, Italy Massimiliano Mattei, Second University of Naples, Italy Gaetano Tartaglione, University of Naples "Parthenope", Italy

525 Research Status and Prospect of Space Metrology

Liu Min, Beijing Oriental Institute of Measurement & Test, China Xu Si-wei, Beijing Oriental Institute of Measurement & Test, China Su Xin-guang, Beijing Oriental Institute of Measurement & Test, China Lu Run-xi, Beijing Oriental Institute of Measurement & Test, China

531 Piezoelectric Harvester-Based Structural Health Monitoring that Uses a Self-Powered Adaptive Circuit

Albert Álvarez-Carulla, University of Barcelona, Spain Jordi Colomer-Farrarons, University of Barcelona, Spain Jaime López-Sánchez, University of Barcelona, Spain Pere Miribel-Català, University of Barcelona, Spain

536 An early-warning aerospace system for relevant water bodies monitoring

Ivano Manfredonia, University of Tor Vergata, Italy Cosimo Stallo, University of Tor Vergata, Italy Marina Ruggieri, University of Tor Vergata, Italy Gaetano Massari, AerialClick Srls, Italy Sabrina Barbante, AerialClick Srls, Italy

541 Embedded RTOS Implementation for Twin Nano-Satellite STUDSAT-2

Kamal Lamichhane, Nitte Meenakshi Institute of Technology, India

Kiran M, Nitte Meenakshi Institute of Technology, India

Kannan T, Nitte Meenakshi Institute of Technology, India

Divyanshu Sahay, Nitte Meenakshi Institute of Technology, India

Ranjith H. G, Nitte Meenakshi Institute of Technology, India

S. Sandya, Nitte Meenakshi Institute of Technology, India

SS11 (Part 2): Special Session on Sensors, Measurements, and Information Fusion for Air Space Security and Defense

Room: Blue Hall, Palazzo San Domenico

Chairs: Domenico Accardo, University of Naples Federico II, Italy Leopoldo Angrisani, University of Naples Federico II, Italy

547 HyperCube - The intelligent hyperspectral imager

Marco Esposito, Cosine Measurement Systems, The Netherlands & Coseno s.r.l., Italy Alessandro Zuccaro Marchi, ESA-ESTEC/TEC, The Netherlands

551 Compact Millimeter Wave FMCW InSAR for UAS Indoor Navigation

Antonio Fulvio Scannapieco, University of Naples Federico II, Italy Alfredo Renga, University of Naples Federico II, Italy Antonio Moccia, University of Naples Federico II, Italy

557 Blind LTV shortening of doubly selective OFDM channels for UAS applications

Donatella Darsena, Parthenope University of Naples, Italy Giacinto Gelli, University of Naples Federico II, Italy Francesco Verde, University of Naples Federico II, Italy Ivan Iudice, Italian Aerospace Research Centre, Italy

562 A new high sensitivity radar sensor for space debris detection and accurate orbit determination

Alessandro Morselli, Politecnico di Milano, Italy

Pierluigi Di Lizia, Politecnico di Milano, Italy

Germano Bianchi, National Institute for Astrophysics - IRA (INAF-IRA), Italy

Claudio Bortolotti, National Institute for Astrophysics - IRA (INAF-IRA), Italy

Stelio Montebugnoli, National Institute for Astrophysics - IRA (INAF-IRA), Italy

Giovanni Naldi, National Institute for Astrophysics - IRA (INAF-IRA), Italy

Federico Perini, National Institute for Astrophysics - IRA (INAF-IRA), Italy

Giuseppe Pupillo, National Institute for Astrophysics - IRA (INAF-IRA), Italy

Mauro Roma, National Institute for Astrophysics - IRA (INAF-IRA), Italy

Marco Schiaffino, National Institute for Astrophysics - IRA (INAF-IRA), Italy

Andrea Mattana, National Institute for Astrophysics - IRA (INAF-IRA), Italy

Emma Salerno, National Institute for Astrophysics - IRA (INAF-IRA), Italy

Alessio Magro, University of Malta, Malta

Kristian Zarb Adami, University of Malta, Malta

Roberto Armellin, University of Southampton, UK

Andrea Lazzareschi Sergiusti, Vitrociset S.p.A., Italy

Walter Villadei, Italian Air Force (ITAF), Italy

Ferdinando Dolce, Italian Air Force (ITAF), Italy

Marco Reali, Italian Air Force (ITAF), Italy

Jacopo Paoli, Italian Air Force (ITAF), Italy

SS9 (Part 3): Special Session on Measurement and Instrumentation for Aerospace Application

Room: Library of Province of Benevento

Chairs: Marco Pertile, Center of Studies and Activities for Space (CISAS), Italy Enrico Lorenzini, Center of Studies and Activities for Space (CISAS), Italy

568 Optical Flow Sensor based Localization System for a Cooperating Spacecraft Testbed

Andrea Valmorbida, Center of Studies and Activities for Space (CISAS), Italy Sergio Tronco, Center of Studies and Activities for Space (CISAS), Italy Mattia Mazzucato, Center of Studies and Activities for Space (CISAS), Italy Stefano Debei, Center of Studies and Activities for Space (CISAS), Italy Enrico Lorenzini, Center of Studies and Activities for Space (CISAS), Italy

574 A Sounding Rocket As A Test Bench For Cost Effective Measurements

Matteo Poli, Nimbus Project, Italy
Nicola Bressanin, Nimbus Project, Italy
Alberto Madonna, Nimbus Project, Italy
Mattia Pezzato, Nimbus Project, Italy
Eugenio Di Iorio, Nimbus Project, Italy
Andrea Mastrangelo, Nimbus Project, Italy
Federico Rodighiero, Nimbus Project, Italy
Giovanni Venturelli, Nimbus Project, Italy
Stefano Debei, Center of Studies and Activities for Space (CISAS), Italy
Carlo Bettanini, Center of Studies and Activities for Space (CISAS), Italy

580 Multiple measurement techniques in a complex satellite antenna integration scenario

Marco Cotogni, Thales Alenia Space Italy, Italy Maurizio Di Serio, Thales Alenia Space Italy, Italy Gabriele Cosentino, Thales Alenia Space Italy, Italy Roberto Silvesti, Thales Alenia Space Italy, Italy Fabio Di Giorgio, Thales Alenia Space Italy, Italy Mathias von Alberti, Airbus DS GmbH, Germany Stephen Diel, Airbus DS GmbH, Germany Sebastian Schwarz, Airbus DS GmbH, Germany

585 MarsTEM field test in Mars analog environment

Giacomo Colombatti, Center of Studies and Activities for Space (CISAS), Italy Sebastiano Chiodini, Center of Studies and Activities for Space (CISAS), Italy Enrico Friso, Center of Studies and Activities for Space (CISAS), Italy Alessio Aboudan, Center of Studies and Activities for Space (CISAS), Italy Carlo Bettanini, Center of Studies and Activities for Space (CISAS), Italy Matteo Poli, Center of Studies and Activities for Space (CISAS), Italy Stefano Debei, Center of Studies and Activities for Space (CISAS), Italy Francesca Esposito, INAF - Osservatorio Astronomico di Capodimonte, Italy Cesare Molfese, INAF - Osservatorio Astronomico di Capodimonte, Italy Pietro Schipani, INAF - Osservatorio Astronomico di Capodimonte, Italy Laurent Marty, INAF - Osservatorio Astronomico di Capodimonte, Italy Raffaele Mugnolo, Italian Space Agency, Italy Simone Pirrotta, Italian Space Agency, Italy Ernesto Marchetti, Italian Space Agency, Italy

591 Design of an interferometric displacement sensor with picometer resolution for the Galileo-Galilei mission

Marco Pisani, National Institute of Metrological Research, Italy Giovanni Mana, National Institute of Metrological Research, Italy Anna M. Nobili, University of Pisa & INFN, Italy

597 Index of Authors