

Impressions of the 2nd IEEE AESS Workshop on Metrology for AeroSpace (MetroAeroSpace 2015), June 3-5, 2015, Benevento, Italy

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The world of measurements of electrical and electronic equipment has always been crucial in the aerospace sector. The topic is of great interest when considering investments in the aerospace sector and the creation of Districts Aerospace. To date, however, apart from industry conferences where there are specific issues related to the field of metrological interest, it has never organized a conference cycle, bringing together experts in aerospace metrology.

After the great success of the *1st IEEE International Workshop on Metrology for Aerospace* (MetroAeroSpace 2014), which was attended by over one hundred researchers, it was decided to promote a second edition of this event, aimed to strengthen and support collaborations among researchers working on the development of instrumentation and methods of measurement for the aerospace industry.

The second *IEEE International Workshop on Metrology for Aerospace* (MetroAeroSpace, www.metroaerospace.org), was proposed as an international meeting place in the world of research in the field of metrology for aerospace where national and international institutions and academia could discuss the state of the art concerning issues that require a joint approach by experts of measurement instrumentation and industrial testing (typically professional engineers) and experts in innovation metrology (typically academic).

MetroAeroSpace was technically co-sponsored by the Aerospace and Electronic Systems Society and the IEEE Instrumentation and Measurement Society and financially sponsored by AESS. It was held in Benevento, Italy, on June 3-5, 2015.

MetroAeroSpace 2015 was jointly organized by Pasquale Daponte, University of Sannio, Italy, and Robert Rassa, Raytheon, US, acting as executive co-chairs. Technical Program Chairs

were Stephen Dyer, Kansas State University, US, and Alfonso Farina, IEEE BoG AESS VP for Industry Relations, CTIF Industry Advisory Chair, Italy; while Ernestina Cianca and Cosimo Stallo, University of Rome "Tor Vergata", Italy, served as Publicity Chair and Treasury Chair, respectively. Honorary Chair was Marina Ruggieri, University of Rome "Tor Vergata", Italy.

MetroAeroSpace 2015 saw the presence of Enrico Flamini, Italian Space Agency; Marcello Coradini, European Space Agency; and Massimo Inguscio, President of Italian National Institute of Metrological Research. A panel discussion "*Opportunities and Projects for Metrology in Aerospace*" was organized among these bodies, companies, and researchers in the field of aerospace metrology.

The presence of the Italian Air Force during the first and second edition of the Workshop met with unanimous acclaim in the world of metrology for aerospace. The static exhibition of a UAV "Strix C" by the 16th Wing of the Italian Air Force, and the participation of lecturers from the Group for Aerospace Engineering Department of Flight Test, remarked the presence of the Italian Air Force at the Workshop.

The event was organized again in Benevento, Italy, at the University of Sannio. The area has great tourism potential, while being long left out of the big international circuits, and is rich in history. For these reasons, it is particularly attractive to researchers from overseas. Recognition as a UNESCO site of "*The Lombards in Italy. Places of the power (568-774 AD)*" greatly enhances the attractiveness of the City of Benevento.

The event received the support of several public institutions and private companies, listed on the website <http://www.metroaerospace.org>.

In the heart of Benevento, a central workshop
for the development of metrology for aerospace.



metroaerospace.org/index.php/sponsorship-exhibition/institutional-patronage.

A parallel event at the *2nd IEEE International Workshop on Metrology for AeroSpace* was held at the Italian Air Force Academy on June 3rd, “Military Metrology for Aerospace”, organized dall’AFCEA Chapter of Naples, a web page of the event can be found at; <http://www.metroaerospace.org/military/>

The technical program was particularly difficult to arrange because we received, for this 2nd Workshop, 146 abstracts from all over the world. After the program committee and the additional reviewers performed their reviews, only 115 papers were selected, due to the time limits of the conference. Authors from 22 countries attended the Workshop. All workshop papers that have been accepted in a peer-reviewed process are made globally accessible via IEEE Xplore®.

The technical program included several events and activities. The keynote speeches were delivered by experts in the field of metrology for aerospace:

- ▶ Shant Kenderian, PhD, The Aerospace Corporation, El Segundo, USA, “*Nondestructive Evaluation as a Tool for Mission Success*”,
- ▶ Marcello Coradini, ESA/JPL, “*Measurements in space and their impact on mission design*”.

This edition of the Workshop included for the first time a full day of tutorials on four subjects:

- ▶ *Space Environment and Mission Requirements*, Stefano Debei, University of Padova, Italy



Static exhibition of a UAV “Strix C” by the 16th Wing of the Italian Air Force.

- ▶ *Design of a Deep Space Science Mission*, Marcello Coradini, ESA / JPL
- ▶ *Launch Systems*, Enrico Flamini, ASI - Italian Space Agency, Italy
- ▶ *Astrodynamics: an Overview*, Enrico Lorenzini, University of Padova, Italy

To encourage the attendance of young researchers, some awards were offered, in particular:

Best paper presented in the Special Session on Non-Destructive Testing and Evaluation for Aerospace went to “Lock-In Termography for Investigation of Impact Damage in Hybrid Polypropylene/Glass Composites” by Simone Boccardi, Giovanni Maria Carlomagno, Carosena Meola, and Giorgio Simeoli, University of Naples Federico II, Italy; Domenico Acierno, Reference Centre for Processing Technology of Polymers and Composites, Italy; and Salvatore Iannace, Luigi Sorrentino, and Pietro Russo, National Research Council, Italy. *The award (a plaque) was sponsored by Palmer (Parco Scientifico e Tecnologico del Lazio Meridionale).*

Best paper presented by an Italian woman went to “The Relativity Experiment of MORE: Global Full-Cycle Simula-



Italian Air Force Academy, “Military Metrology for Aerospace”, organized by dall’AFCEA Chapter of Naples as parallel event to the 2nd Workshop.



Florence, Italy: Cattedrale di Santa Maria del Fiore



Award Ceremony.



The social events include a welcome Party and a gala dinner, both with music for entertainment.

tion and Results” by Giulia Schettino and Giacomo Tommei, University of Pisa, Italy; and Stefano Cicalò and Sara Di Ruzza, SpaceDyS s.r.l., Italy. *The award (a plaque) was offered by Rotary - “Club di Benevento” (District 2100).*

Best paper presented by a woman (or women) went to “Spacecraft Design Impacts on the Post-Newtonian Parameter Estimation” by Anja Katharina Schuster, Technical University of Darmstadt, Germany; and Rüdiger Jehn and Elsa Montagnon, European Space Operations Center, Germany. *The award (a plaque) was offered by the International Inner Wheel - “Club Costiera Amalfitana” (District 210 Italy).*

Best paper of the poster session went to “On-Ground Actuator Calibration for ISA - BepiColombo” by Marco Pisani and Milena Astrua, National Institute of Metrological Research, Italy; and Valerio Antonio Iafolla, Francesco Santoli, David Lucchesi, Carlo Lefevre, and Marco Lucente, Institute for Space Astrophysics and Planetology, Italy. *The award was a plaque.*

Best paper presented by a young researcher (researchers) went to “Large Space Debris Pose Acquisition in Close-Proximity Operations” by Roberto Opromolla, Giancarmine Fasano, Giancarlo Rufino, and Michele Grassi, University of Naples Federico II, Italy. *The award was a plaque.*

LOOKING TO THE FUTURE—METROAEROSPACE 2016

We are pleased to invite you to contribute to the 3rd International IEEE Workshop on Metrology for Aerospace which will be held in Florence, Italy June 22-23, 2016.

MetroAeroSpace 2016 includes, but it is not limited to, new technology for metrology-assisted production in aerospace industry, aircraft component measurement, sensors, and associated signal conditioning for aerospace, calibration methods for electronic test and measurement for aerospace.

Special Sessions have the main aim of creating a mini-workshop atmosphere on a specific topic where researchers working on the same argument can build their knowledge, familiarize, exchange ideas, and create cooperation.

You may find more about how to submit a Special Session Proposal at: www.metroaerospace.org/index.php/program/special-session

Finally, we wish to underline that if you ever come to Tuscany in June, try to be in Florence on June 24th. It's St. John day, the patron saint of the city, the saint to whom the famous Baptistry is dedicated, and during the day there are different events around the city to celebrate it! At the conclusion, on the evening of the June 24th, there is a traditional fireworks display in *Piazzale Michelangelo* called St. John's fireworks, which draws a huge crowd, especially concentrated on the *Lungarni* (Arno river promenades). The fireworks normally begin at 10 pm and we recommend you arrive a little bit earlier to find a nice spot from which to enjoy the show!

For more information, please contact: Pasquale Daponte, email: daponte@unisannio.i



Florence, Italy: On the evening of June 24th, there is a fireworks display in Piazzale Michelangelo called the St. John's fireworks.