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Universidad
Carlos III
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@UC3M FiWiN5G Winter School

6th November 2017

Organized at Universidad Carlos III de Madrid, co-located with DIFRAGEOS workshop. DIFRAGEOS is a Comunidad de Madrid project on space technologies applied to ge-positioning.

DIFRAGEOS



**Comunidad
de Madrid**

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Red Temática de Excelencia TEC2015-69787-REDT



DIFRAGEOS Workshop (November 6th , 2017)

Universidad Carlos III de Madrid, Leganés Campus, Salón de Grados Padre Soler

The objective of this workshop is to enable attendants to understand new instruments and devices for radio-telescopes for earth and space to make highly accurate geodesic measurements and very high sensitivity astronomic observations. Different standards used in the field of the Global Geodesic Observation System (GGOS) in the International Association of Geodesic (IAG) will be presented.

Soon it is going to be required to perform relevant studies and HW/SW platforms, assessing the role of GNSS in general and Galileo in particular in the next generation 5G wireless networks, in the areas of positioning and network synchronisation, including relevant contributions to standardisation bodies (3gpp and ITU)

Program

9:00-9:15: Registration

9:15-9:30 **Opening ceremony and presentation of Difrageos project.**

9:30-10:15: **LNA at millimeter frequencies.** Eduardo Artal, Universidad de Cantabria

10:15-11:00: **VGOS systems: the OTT project** Rudiger Haas (Chalmers University of Technology)

11:00-11:45 Coffee break and **poster session** on space instrumentation and Difrageos project

11:45-12:30 **Receivers at millimeter and submillimeter frequencies.** Ramón Gonzalo UPNa

12:30-13:30 **Difrageos project:** L-E. García, J.A. López, G. Carpintero

13:30 – 14:30 Lunch Break

14:30-15:45 **Round Table:** Applied research and product development in the space area: synergy between university and companies. INDRA, GMV (tbc), Airbus, Sener.

15:45-16:30 Coffee break and poster session on space instrumentation and Difrageos project

16:30-17:15 **Superconductor filters,** Dr. Fred Huang (Birmingham University)

Poster session:

Title: **“Development of Reflectarray Antennas at Millimeter and Submillimeter Frequencies”** E. Carrasco, G. Pérez-Palomino, M. Barba, X. Quintana, M. Andreas, J. M. Otón, J. A. Encinar; School of Telecommunications Engineering, Universidad Politécnica de Madrid, Madrid, España. D. Headland, W. Withayachumnankul, D. Abbott, C. Fumeaux; School of Electrical and Electronic Engineering, The University of Adelaide, Adelaide, Australia. S. Nirantar, P. Gutruf, J. Schwarz, M. Bhaskaran, S. Sriram; MicroNano Research Facility, RMIT University, Melbourne, Australia

Title: **"Waveguide Passive Devices for Space Applications: An Overview."**; J.R. Montejo, J.M. Rebollar, J. Ruiz et al. Universidad Politécnica de Madrid (UPM) y Universidad Autónoma de Madrid (UAM)

Title: **"Reconfigurable and Multi-Functional Filtering Devices"**; R. Gómez-García, J.M. Muñoz-Ferreras. Universidad de Alcalá de Henares (UAH)

Title: **"Status of RAEGE project: the Spanish VGOS experience"** J.A. López-Pérez et al, Difrageos, Observatorio Astronómico Nacional Yebes, OAN-IGN.

Title: **"Yebes Observatory Broad-band Receiver for RAEGE/VGOS radio telescopes"** J.A. López-Pérez et al, Difrageos, Observatorio Astronómico Nacional Yebes, OAN-IGN.

Title: **"2-14 GHz bandwidth feed solution"**, L.E. García et al; Difrageos, GREMA-UC3M

Title: **"Room temperature receiver for CMB spectroscopy"** L.E. García et at; Difrageos, GREMA-UC3M

Title: **"Guided wave and printed filters for space applications"** A.G. Lampérez et at; Difrageos, GREMA-UC3M

Title: **"Deformation Measurement System with Temperature Compensation by Using Fiber Bragg Gratings"** A. Zarzuelo, D. Gallego, H. Lamela and Guillermo Carpintero, Difrageos, GOTL-UC3M

Title: **"Photonic Integrated Circuit Microwave Frequency Comb Generator using a low repetition rate mode-locked semiconductor laser"** G. Carpintero et al; Difrageos, GOTL-UC3M

Title: **"INTA antenna and RCS testing facilities"**, J.R. Rodríguez-Amor, J.A. Luque; Difrageos, INTA

Title: **"Radioastronomy dual MMIC LNA"** V. González-Posadas et al; Difrageos, DIEMAG Universidad Politécnica de Madrid

Title: **"New differential MMIC LNA"** V. González-Posadas et al; Difrageos, DIEMAG Universidad Politécnica de Madrid

Title: **"FPGA Firmware Development for the Phased-Array Mode of the PolyFiX Correlator"** A.Rovira-Moreno, R.García, O.Gentaz, E.Boemo, J.A. López-Pérez; Universidad Autónoma de Madrid (UAM), Digital System Lab (DSLab), Institut de Radioastronomie Millimétrique (IRAM), Instituto Geográfico Nacional(IGN)

Title: **"High Precision FPGA-based Phasemeter for Radio-Astronomy Applications"** A. Rovira-Moreno, E.Boemo, J.A. López-Pérez; Universidad Autónoma de Madrid (UAM), Digital System Lab (DSLab), Instituto Geográfico Nacional(IGN)