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First Announcement of the RadioNet-FP7 Engineering Forum Workshop

"Photonics in Radio Astronomy"

2-3 September 2010

University of Aveira, Telecommunication Institute

Aveiro, Portugal

Information and registration:

http://www.radionet-eu.org/fp7wiki/doku.php?id=na:engineering:ew:4thew

Contact:

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Dear Colleagues,

We are pleased to announce the fourth of RadioNet Engineering Forum Workshops in FP7. The workshop "Photonics in Radio Astronomy" will be held on 2-3. September 2010 at the Univeristy of Aveiro, Aveiro, PORTUGAL.

This meeting is the fourth in a series of engineering workshops sponsored and organized by the EU Consortium RadioNet-FP7 within the Seventh Framework Program of the European Commission and continues a very successful series of workshops organised within the Sixth Framework Programme.

For information on past meeting in this series see
http://www.radionet-eu.org/fp7wiki/doku.php?id=na:engineering:ew

The old meeting within the FP6 RadioNet Engineering Forum see
http://www.radionet-eu.org/rnwiki/EngineeringForumMeetings.

WORKSHOP OBJECTIVES

Photonics is the generation, process and manipulation of photon to achieve a certain function. With photonics we manipulate the power (loss/gain), phase, polarization and wavelength independently. For radio astronomy, it presents the advantage of low electromagnetic interference, ultra high bandwidth , without the mechanical cumbersome parts typical of radio astronomy receivers. Fiber can be used to transport radio signal (RF) allowing the complex receiver circuitry to be hosted at distant locations, with low noise figure and high dynamic range. Where do the antenna and fronted ends and the backend begins? Can we combine and beam form the response of several antennas or phase arrays? Is it better to digitize at the frontend or at the backend? The applications in real world are already innumerous, ranging from wireless networks to GPS. Fiber is also very efficient to transport data, with potentially dozens of THz available for transmission. Optical networks will be

critical to performance of today's and future radio telescope networks, as is already demonstrated by e-EVN, e-Merlin, ALMA, the soon starting LOFAR and e-VLA and it will be even more so for the large Terabits/sec expected from the future facilities like the SKA. Photonics in the heart of radio astronomy receivers and networks is a natural path for development for the next advanced generation of radio astronomy experiments, with capabilities for industrial partnership."

We intend to review current trends in photonics and its use in radio astronomy applications, in receivers and signal transport. Some examples of real cutting-edge real-world examples will be provided by some industries.

Everybody is asked to present his interesting work in an oral or poster presentation.

PRELIMINARY PROGRAM OF THE WORKSHOP

The meeting will be informal and should offer lots of time for discussions. Each presentation is limited to a maximum of about 20 minutes with an additional 10 minutes for discussion.

Potential Speakers are asked to send a short abstract to Izabela Rottmann <irottmann@mpifr-bonn.mpg.de> until 01. August 2010.

The abstracts will be made available as a workshop worksheet.

Start of workshop: Thursday, 02. September 2010 at 9:00 a.m.

End of workshop: Friday, 03. September 2010 at abt. noon

A dinner sponsored by RadioNet-FP7 will be held on Thursday at ~ 8 p.m.

We plan to organise a trip to the Observatory 03. Sep 2010 in the morning. Please indicate in the registration form if you would like to participate in this tour.

For an up-to-date version see:

http://www.radionet-eu.org/fp7wiki/doku.php?id=na:engineering:ew:4thew

A preliminary list of topics includes:

RF Bandwidth needs

- Single Dishes
- Synthesis Arrays
- e-VLBI

Large baselines Telescopes

- LOFAR
- ATA
- ASKAP
- Meercat

Goal: SKA

<u>PROCEEDINGS</u>

The presentations will be made available via Internet.

REGISTRATION AND ACCOMMODATION

Registration can be made using the online form:

http://www.mpifr-bonn.mpg.de/div/vlbi/4thFP7/

Please register until 31. July 2010!

Accommodation information (hotel, booking) are available also on the workshop wiki page:

http://www.radionet-eu.org/fp7wiki/doku.php?id=na:engineering:ew:4thew

FINANCIAL ASSISTANCE

Limited financial assistance will be provided for speakers and attendees.

Please contact the chairman of the Engineering Forum, Reinhard Keller, <rkeller@mpifr-bonn.mpg.de> for more information.

DEADLINES

31. July 2010: Registration

01. August 2010: Deadline for the Abstracts

ORGANISATION

SOC:

Domingos Barbosa
Reinhard Keller
Rosheen McCool

LOC:

tbd (waiting)
Luis Cupido
Izabela Rottmann