Università Tor Vergata, Roma

Ingegneria Civile e Ingegneria Informatica

GeoInformation PhD Curriculum

5^{th} 2014 GeoInformation Seminar

DISP meeting room, Ingegneria dell'Informazione, 1 Via del Politecnico
24 April 2014, starting at 15:00

Sara Amendola

Epidermal Electromagnetics

The recent progress in electronics on unconventional substrates hints at a promising future for new flexible, stretchable and eco-friendly multifunctional devices serving the environmental, biotech, pharmaceutical, and medical sectors.

The research aims at exploring the potential of wireless, passive radio-sensors integrated within biocompatible and possibly biodegradable membranes that fit onto the curved interfaces of a variety of objects, including living organisms (such as human or vegetal tissues), and food. Issues concerning the radio-sensor design (chipped RFID-like sensors and chipless RF miniaturized resonators) will be introduced, as well as the key-role of the underlying membrane which can enhance the sensing capabilities of the system by bioactive molecules loading.

Sara Amendola received her M.Sc. with honors in Medical Engineering in 2013 from the Tor Vergata University, Rome, where she is pursuing the PhD Degree. Her thesis was awarded the Best Masters Thesis National Prize by the Italian Association for ICT (AICA). In fall 2013, she visited Tampere University of Technology, Finland, where she was involved in the design of mm-size implantable antennas for brain-machine interface microelectronic systems. Her current research mainly concerns the epidermal electromagnetic sensors exploiting biocompatible and biodegradable substrate antennas.

Giuseppe Iannitto

A Neural Network approach for management and exploitation of Earth Observation Big Data

Earth Observation satellite data are steadily growing in size and diversity at an exceptionally fast rate, making increasingly difficult their processing, managing and analysis by traditional databases and architectures: a revision is urgently demanded.

The objective of the research is the design and development of Neural Network architectures to manage and exploit large collections of unstructured EO data. The main issues regard pattern recognition, classification, and information extraction, with particular emphasis on detecting land use changes.

Giuseppe Iannitto received the M.Sc. Degree in Environmental Engineering from La Sapienza University, Rome, in 1999. He is now a PhD candidate at Tor Vergata University. Since 1999 he has worked as Senior IT Consultant/Manager in the ICT Industry, involved in several projects on system integrations, web architecture and software development, including collaboration & communication web portals and Automatic Incident Detection systems by Neural Networks.

Massimiliano Sist

Possible use of lightning data for rainfall estimation in a multi-sensor and cross-platform approach

An optical Lightning Imager (LI) is planned for the next generation of geostationary meteorological satellites (MeteoSat Third Generation - MTG). The LI, together with the Geostationary Lightning Mapper (GLM), to be flown on the next generation of Geostationary Operational Environmental Satellites (GOES), will provide an almost global coverage of lightning. Such a continuous flow of lightning data from space is expected to be crucial for nowcasting, climatology and atmospheric research.

The aim of the project is to investigate the synergy between lightning data and images from geostationary and polar platforms to improve the quantitative estimates of precipitation. A key point will be the "T-Re" relation between cloud top temperature and microstructure, indicative of the rain forming processes that affect electrification.

Massimiliano Sist received the M.Sc. Degree in Physics from La Sapienza University, Rome. He is now a PhD candidate at Tor Vergata University. Since 2009 he has been with the Satellite Area of the Centro Nazionale di Meteorologia e Climatologia Aeronautica (CNMCA) in Pratica di Mare, where he developed lightning data assimilation schemes for convective rain rate estimation. He has been Principal Investigator in EUMETSAT studies and since 2013 he has been with GEO-K involved in the management and development of the Hydrological Satellite Application Facility (H-SAF) processing chains.

You are cordially invited to attend.