

Distinguished Lecturer Series “Leon the Mathematician” at the Department of Informatics, Aristotle University of Thessaloniki Greece (<http://dls.csd.auth.gr>) - CIS011 Greek IEEE Computational Intelligence Chapter, SP01 Greek IEEE Signal Processing Chapter



## **INVITED LECTURE**

**Dr. Gonzalo R. Arce** (IEEE Fellow, Charles Black Evans Professor of Electrical and Computer Engineering, University of Delaware, USA) is going to lecture on

### **Compressive Spectral Image Sensing, Processing, and Optimization**

at the **Auditorium of the Central Library** of the Aristotle University of Thessaloniki on **Friday March 14<sup>th</sup>, 2014 at 16:00.**

#### **ABSTRACT**

Coded aperture compressive spectral imaging is a remarkable architecture that captures a 3-Dimensional spectral image scene with just one or a few 2-Dimensional focal plane array measurements. The rich theory of compressive sensing is then used to effectively reconstruct the spectral bands of interest from the set of underdetermined measurements. Notably, the coded apertures used in spectral imaging play a key role in such imaging systems. This talk describes the intimate link between the coded apertures used in the optical system and the fundamental principles used in compressive sensing. We show how coded aperture optimization can have a significant impact on image quality and how their optimization can be tailored directly to attain super-resolution, spectral selectivity, and to applications such as spectral image classification and unmixing directly from coded aperture compressive measurements.

#### **About the Speaker:**

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**Dr. Gonzalo R. Arce** is the Charles Black Evans Professor in the Electrical and Computer Engineering Department at the University of Delaware. His fields of interest lie in computational imaging, nonlinear signal processing, and the analysis and processing of high-dimensional data. He is the author of four textbooks. He received the 2010-2011 Nokia-Fulbright Distinguished Chair in Information and Communications Technologies. He is a Fellow of the IEEE and of the Center for Advanced Studies at the University of Delaware. His work has been supported by ARO, ONR, ARL, NSF, and several industrial organizations.