ADA 7 - The 7th Conference on Astronomical Data Analysis

The ADA Conference series has become the Number One event for presenting the state of the art in multiscale image and signal processing methodologies, and their application to the major astronomical missions, both current and future.   As such, the ADA Conferences play a central role in transmitting skills and insights on data analysis methodology, on software systems, and on the exploitation of astronomical data. For those involved in major astrophysics missions, and in particular for young researchers, the ADA Conferences foster close interactions, discussions and lively debates, typically held at venues that reinforce the learning, and the research sharing and dissemination, that ensues. Held regularly since 2001, the ADA conference series has been characterized by a range of innovative themes, including multiscale geometric transforms such as the curvelet transform, compressed sensing and clustering in cosmology, while at the same time remaining closely linked to front-line open problems and issues in astrophysics and cosmology.

ADA 7 in particular included sessions on asteroseismology, exoplanet detection, large scale structures (weak lensing, galaxy catalogs), CMB (source separation, polarization), restoration (map-making, deconvolution, modeling), hyperspectral data analysis, compressed sensing. The conference took place in May 2012 at the Institut d'Etudes Scientifiques de Cargèse, located near the village of Cargèse on the west coast of the island of Corsica (France). It was supported financially by the European Astronomical Society under the EAS Colloquia initiative, which support the exchange of ideas and promotes cross-fertilization of ideas between scientists working in Europe.

Prior to the conference Sandrine Pires, Florent Sureau, Petr Skoda, Florent Sureau, Dan Bamich, Wolfram Freudling, and Jérôme Bobin organized a total of 8 tutorial presentations. The topics included sparse representations and compressed sampling, deconvolution and filtering, data analysis on the sphere, inpainting, and blind source separation.

The keynote and invited speakers of the confenrece included Martha P. Haynes (Cornell University, USA), François Bouchet (IAP Paris, France), Masahiro Takada (IPMU, Tokyo, Japan), Pavlos Protopapas (CFA Harvard, USA), Gabriel Peyré (Paris Dauphine, France), Jalal Fadili (Caen University, France), Mike Hobson (Cambridge University, UK), G. Jogesh Babu (Penn State University, USA), Roberto Trotta (Imperial College London, UK), Enrique Martinez (Inst. de Física de Cantabria, Santander, Spain), Yves Wiaux (EPFL, Switzerland), Adrienne Leonard (CEA, Saclay, France), and Benjamin Joachami (Edinburgh University, UL).

The online presentations consist of the 42 invited and contributed talks, as well as 11 posters. In the online proceedings, there are 17 additional papers. All materials related to the conference are available online at: http://ada7.cosmostat.org providing an excellent entry point to the conference topics. We believe that due to the wealth of material addressing the current state of the art in the methodology, applications, and dedicated missions, the above site should be added to one's address book, as a singularly important resource.

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