École Internationale Daniel Chalonge

15th Paris Cosmology Colloquium 2011

20 Years of Activity

FROM COLD DARK MATTER TO WARM DARK MATTER IN THE STANDARD MODEL OF THE UNIVERSE : THEORY AND OBSERVATIONS

Wednesday 20, Thursday 21 and Friday 22 July 2011

OBSERVATOIRE DE PARIS, PARIS CAMPUS

PROGRAMME and LECTURERS

- **Philippe ANDRÉ (CEA/DSM/IRFU Saclay Orme des Merisiers, Gif-sur-Yvette, France)**
  From the Filamentary Structure of the ISM to Prestellar Cores to the Stellar IMF: Recent Herschel Results
- **Peter BIERMANN (MPI-Bonn, Germany & Univ of Alabama, Tuscaloosa, USA)**
  Astrophysical Warm Dark Matter
- **Pasquale BLASI (INAF/Arcetri Astrophysical Observatory, Firenze, Italy)**
  Astrophysical Origin of the Positron Excess in Cosmic Rays
- **Daniel BOYANOVSKY (Univ. of Pittsburgh, Dept of Physics and Astronomy, USA)**
  Sterile Neutrinos as Warm Dark Matter Candidates.
- **Carlo BURIGANA & Reno MANDOLESI (INAF-IASF, Bologna, Italy)**
  The Planck satellite: from the first astrophysical results to cosmological promises
- **Asantha COORAY (University of California, Irvine, USA)**
  The Herschel-SPIRE Legacy Survey (HSLS): Cosmological and Dark Matter Implications
- **Hector J. DE VEGA (CNRS LPTHE UPMC, Paris, France)**
  The Standard Model of the Universe: The Effective Theory of Inflation. Warm Dark Matter from theory and galaxy observations
- **Joanna DUNKLEY (Oxford Univ, Astrophysics, UK)**
  Cosmological Implications of the Atacama Cosmology Telescope Results
- **LI-ZHI FANG (University of Arizona, Tucson, USA)**
  Missing Baryons and the Decoupling of the IGM from Dark Matter
- **Gerard F. GILMORE (Institute of Astronomy, Cambridge University, UK)**
  Observational Properties of Dark Matter on Small Astrophysical Scales
- **Steen HANNESTAD (University of Aarhus, Denmark)**
  Neutrino Physics from Precision Cosmology
- **Alexander KASHLINSKY (NASA Goddard Space Flight Center, Greenbelt, MD, USA)**
  Measuring Large Scale Flows of X-ray Luminous Galaxy Clusters
- **Anthony N. LASENBY (Cavendish Laboratory, Cambridge, UK)**
  The CMB in the Standard Model of the Universe: A Status Report
- **Manfred LINDNER (Max Planck Institut für Kernphysik, Heidelberg, Germany)**
  keV Sterile Neutrinos as Dark Matter
- **John C. MATHER (NASA Goddard Space Flight Center, Greenbelt, MD, USA)**
  Special Lecture: The James Webb Space Telescope
- **Félix MIRABEL (CEA-Saclay, France & IAFE-Buenos Aires, Argentina)**
  Astrophysical Black Holes and the Re-ionization of the Universe
- **Yoel REPHAELI (Tel Aviv University, Ramat Aviv, Israel)**
  Dark Matter and Galaxy Cluster Evolution
- **Paolo SALUCCI (SISSA-Astrophysics, Trieste, Italy)**
  Galaxy observations determine Cored Density Profiles
- **Norma G. SANCHEZ (CNRS LERMA Observatoire de Paris, France). The primordial banana of the Universe and the graviton/scalar ratio from WMAP to Planck. Warm Dark Matter and Galaxy properties from primordial fluctuations and observations**
- **Alexei SMIRNOV (Abdus Salam ICTP, Trieste, Italy)**
  Status of the Theory of Neutrino Masses and Mixings
- **George SMOOT (BCCP LBL Berkeley, IEU Seoul , Univ Paris Diderot)**
  Public Lecture: The Standard Model of the Universe
- **Christian WEINHEIMER (Institut für Kernphysik Universität Münster, Münster, Germany)**
  Absolute Scale of the Neutrino Mass and the Search for Neutrinoless Double Beta Decay

And Other LECTURERS

PURPOSE and TOPICS

The Conference is within the astrofundamental physics spirit of the Chalonge School, focalized on recent observational and theoretical progress on the CMB, dark matter, dark energy, dark ages, and the theory of the early universe with predictive power in the context of the Standard Model of the Universe. Recently, LambdaWDM (Warm Dark Matter) emerged impressively over LambdaCDM (Cold Dark Matter) whose small -galactic- scale (and even larger scale) problems are ever-increasing. LambdaWDM solves naturally the problems of LambdaCDM and agree with the observations at small as well as large and cosmological scales. In summary, the aim of the meeting is to put together real cosmological data and hard theory predictive approach connected to them in the framework of the Standard Model of th Universe.

Chalonge.Ecole@obspm.fr http://chalonge.obspm.fr

H. J. DE VEGA N. G. SANCHEZ M. C. FALVELLA

E. VERGNAUD - communicaCtion@yahoo.fr - 06 22 71 04 48