

Ecole Internationale Daniel Chalonge



Chalonge Meudon Workshop 2015

*In honor of Héctor J. de Vega the scientist
and the human person*

**Warm Dark Matter Cosmology in agreement with
observations: CMB, Galaxies, Black holes and Sterile
neutrinos**

**Observatoire de Paris, CIAS Château de Meudon,
Meudon campus 10, 11 and 12 JUNE 2015**



**All Sessions of the Workshop take place in the historic Castle
building (CIAS, Château de Meudon)**

**Observatoire de Meudon ENTRY : 5 Place Jules Janssen, 95195 Meudon
Entry for cars : 11 Av Marcelin Berthelot , 92195 Meudon**

Sessions start at the indicated times sharp

1 HOUR = 45 minutes lecture + 15 minutes discussions

WEDNESDAY 10 JUNE MORNING

8.10 - 9.30: **URANIA HALL** (*in the Château building*)
REGISTRATION, badges, lunch tickets for the Observatoire Restaurant,
copies of the full Time Table with Lectures and Lecturers.

« SALLE DE CONFERENCES DU CHATEAU »

9.45 - 10:00 **Welcome Address**

10.00 - 11.00 **Peter BIERMANN** (MPI-Bonn, Germany &
Univ of Alabama, Tuscaloosa, USA)
Warm Dark Matter and its astrophysical signatures.

11.00 - 11.30 **COFFEE-TEA-MATE BREAK**
at URANIA HALL, in Château building

11.30 - 12.30 **Héctor J. DE VEGA** (CNRS LPTHE Univ de
Paris VI, France) / **Norma G. SANCHEZ**
*The Structure of Galaxies in keV Fermionic Warm Dark Matter :
Classical and Quantum regimes*

12.30 - 14.00 **LUNCH** *at the Observatoire Restaurant
(Meudon campus around the lac near the Château
building)*

WEDNESDAY 10 JUNE AFTERNOON

« SALLE DE CONFERENCES DU CHATEAU »

14.00 - 15.00 **Sinziana PADUROIU** (Observatoire de Geneve, Switzerland)
Numerical Simulations on Structure Formation in Warm Dark Matter Cosmology.

15.00 - 16.00 **Maxim MARKEVITCH** (NASA/Goddard Space Flight Center, Greenbelt, MD, USA)
The 3.5 keV emission line in the X-ray spectrum of galaxy clusters, results and controversies

16.00 - 16.30 **COFFEE-TEA-MATE BREAK at URANIA HALL, in Château building and CIAS aside Urania Hall**

16.30 - 17.30 **Manolis PAPASTERGIS** (Kapteyn Institute, Univ of Groningen, Netherlands)
Dark matter implications from the ALFALFA 21 cm survey

17.30 - 18.30 **Hareth MAHDI** (Sydney Institute for Astronomy, University of Sydney, Australia)
Gravitational Lensing in Warm Dark Matter and Evolving Dark Energy Cosmologies

THURSDAY 11 JUNE MORNING

« SALLE DE CONFERENCES DU CHATEAU »

10.00 – 11.00 **Thierry LASSERRE** (CEA, IRFU-Saclay, France)

Sterile Neutrino experiments : A Status Report

11.00 – 11.30 **COFFEE-TEA-MATE BREAK at URANIA HALL** *in Château building and CIAS aside Urania Hall*

11.30 - 12.30 **Susanne MERTENS** (Inst. for Nuclear & Particle Astrophysics, LBNL Berkley, CA, USA)
keV Sterile neutrino Warm Dark Matter searches with Tritium Beta Decay experiments.

12.30 – 14.00 **LUNCH** *at the Observatoire Restaurant (Meudon campus around the lac, near the Château building)*

THURSDAY 11 JUNE AFTERNOON

« SALLE DE CONFERENCES DU CHATEAU »

14.00 – 15.00 **Daniel BOYANOVSKY** (Univ. of Pittsburg, Dept of Physics and Astronomy, USA)

Cosmological implications of light sterile neutrinos produced after the QCD phase transition

15.00 – 16.00 **Dietrich BODEKER** (Fakultaet fuer Physik, Universitaet Bielefeld, Germany)

Non-relativistic Leptogenesis and heavy neutrinos

16.00 - 16.30 **COFFEE-TEA-MATE BREAK at URANIA HALL** *in Château building and CIAS aside Urania Hall*

16.30 - 17.30 **Nicola MENCI** (INAF, Osservatorio di Roma, Roma, Italy)

Galaxy and Star formation in Warm Dark Matter Cosmology

17.30 - 18.30 **Anastasia FIALKOV** (Département de Physique ENS Paris France)

Signatures and constraints on Warm Dark Matter scenarios from reionization, 21-cm, first galaxies

FRIDAY 12 JUNE MORNING

« SALLE DE CONFERENCES DU CHATEAU »

10.00 - 11.00 Marco LOMBARDI (Dept. of Physics,
University of Milano, Italy)
*Filaments, Surface density and Scaling laws in Star and
Structure formation: Density Models fitted to Observational
Data*

11.00 - 11.30 COFFEE-TEA-MATE BREAK at
URANIA HALL *in Château building*

PHOTO OF THE GROUP *(in the Urania Hall facade)*

11.30 - 12.30 Paolo SALUCCI (SISSA-Astrophysics,
Trieste, Italy)
*Testing Warm Dark Matter with Galaxy observations at high
redshifts*

12.30 - 14.00 LUNCH BREAK *at the Observatoire
Restaurant (Meudon campus around the lac, near the
Château building)*

FRIDAY 12 JUNE AFTERNOON

« SALLE DE CONFERENCES DU CHATEAU »

14.00 - 15.00 **Brigitte ROCCA-VOLMERANGE** (Univ Paris-Sud & IAP, Paris, France)

The Supernova Remnant Mass accumulated along the star formation history of $z=3.8$ Radio Galaxies and its implications

15.00 - 16.00 **Loredana GASTALDO & Clemens HASSEL** (Kirchhoff Institute for Physics KIP, Univ Heidelberg, Germany) *The Status of the ECHO experiment for the investigation of keV sterile neutrinos.*

16.00 -16.30 **COFFEE-TEA-MATE BREAK at URANIA HALL** *in Château building and CIAS aside Urania Hall*

16.30 - 17.30 **Norma G. SANCHEZ** (CNRS LERMA Observatoire de Paris, Paris, France) *The Thomas Fermi keV Warm Dark Matter Galaxy Theory in agreement with observations: Quantum macroscopic effects and New Results*

17.30 - 18.30 *Tribute to Héctor DE VEGA, the scientist and the human person*

18.30-20.00 APERITIF/COCKTAIL at URANIA HALL
*in Château building for all participants and
accompanying persons.*

**All Lecturers and participants are expected to
remain until the end of the Workshop**

END OF THE WORKSHOP