

## FINAL AGENDA

Keynote 40 min, Invited 30 min, Contributed 15 min, all including questions.

### MONDAY November 4

**8:45 Welcome** - Boulanger & Falgarone

#### **9:00 - Gas Physics, Star Formation and Galaxy Evolution – I**

*Chair: Patrick Hennebelle*

KN **Faucher-Giguère** – Challenges: Galaxy formation and evolution

IT **Fu** – Understanding Galaxy Evolution with Dusty Starburst Galaxies at High-Redshift

CT **Guillard** - Is accretion-driven turbulence a key process for galaxy growth?

*10:25 Coffee*

#### **11:00 - Turbulence, Plasmas, Magnetic Fields and Cosmic Rays – I**

*Chair: Kandaswami Subramanian*

KN **Pouquet** - Dissipation in MHD turbulence

CT **Grete** - Correlations and energy transfer in compressible isothermal and adiabatic MHD turbulence

IT **Zhdankin** - Intermittency of magnetohydrodynamic and kinetic turbulence

*12:30 LUNCH*

#### **15:00 - Gas Physics, Star Formation and Galaxy Evolution – II**

*Chair: Chang-Goo Kim*

KN **Burkert** – Challenges: Star formation, now and then

IT **Meidt** - Molecular gas in the Milky Way and nearby galaxies

IT **Richter** – The many probes of the CGM (*video talk*)

**Poster Flash Talks** (10 min)

*16:50 Coffee*

#### **17:15 - Gas Physics, Star Formation and Galaxy Evolution – III**

*Chair: Claude-André Faucher-Giguère*

IT **Genzel** - The evolution of the ionized gas velocity dispersion in SF galaxies

IT **Oh** – Turbulent Mixing Layers : cold gas, hot winds

CT **Semenov** - The role of ISM turbulence in regulation of star formation in galaxies

#### **DISCUSSION 1** (30min)

The role of turbulence in galaxy evolution

Chairs : **Tacconi, Lehnert**

*WELCOME DRINK*

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### TUESDAY November 5

## **9:00 - Gas Physics, Star Formation and Galaxy Evolution – IV**

*Chair: Ute Lisenfeld*

KN **Bykov** - Challenges in The Hot and Relativistic Universe

IT **Lehnert** - Observations of the multiphase large scale environment of galaxies at high redshift

CT **Mohapatra** - Stratification and turbulence in the intracluster medium

*10:25 Coffee*

## **11:00 - Turbulence, Plasmas, Magnetic Fields and Cosmic Rays – II**

*Chair: Annick Pouquet*

IT **Alexandrova** - Solar wind turbulence

IT **Passot** - Energy dissipation in the Solar wind : theoretical challenges

IT **Matthaeus** - Who needs turbulence? Cascade, intermittency and Reynolds number in solar wind-like plasmas (*video talk*)

*12:30 LUNCH*

## **15:00 - Turbulence, Plasmas, Magnetic Fields and Cosmic Rays – III**

*Chair: Andrei Bykov*

KN **Subramanian** – Challenges: The Origin of cosmic magnetism

CT **Seta** - Magnetic fields in elliptical galaxies : a probe of fluctuation dynamo

IT **Bhattacharjee** – Magnetic reconnection (*video talk*)

*16:25 Coffee*

## **17:00 - Turbulence, Plasmas, Magnetic Fields and Cosmic Rays – IV**

*Chair: Olga Alexandrova*

IT **Pfrommer** - Cosmic rays and magnetic fields in galaxies

CT **Tjus** - Plasma investigations of the connection between turbulence and cosmic ray transport in the ISM

CT **Vinogradov** - MMS observations of thin current sheets in the solar wind

CT **Saveliev** - A Stringent Limit on Primordial Magnetic Fields from the Cosmic Microwave Background Radiation

### **DISCUSSION 2:**

Are turbulent cascades and dissipative processes adequately captured in numerical models?

Chairs : **Pouquet, Zhdankin, Falgarone**

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## **WEDNESDAY November 6**

### **9:00 - Gas Physics, Star Formation and Galaxy Evolution – V**

*Chair: Christoph Pfrommer*

IT **Miville-Deschênes** – The multi-phase ISM: observations (*video talk*)

CT **Bellomi** - 3D chemical structure of the turbulent diffuse interstellar medium

CT **Girichidis** - The chemistry and dynamics of the turbulent ISM including cosmic rays

*10:00 Coffee*

**10:30 - Gas Physics, Star Formation and Galaxy Evolution – VI**

*Chair: Peng Oh*

IT **Zaroubi** - 21 cm Cosmology and the Epoch of Reionization

IT **Fialkov** - Hydro simulations of cosmic dawn

CT **Lewis** - Cosmic Dawn II : galactic photon budget and CGM

**Poster Flash Talks** (10 min)

**DISCUSSION 3:**

Do we need non-linear physics to understand how the universe was re-ionized?

Chairs : **Zaroubi, Fialkov, Boulanger**

*12:30 LUNCH*

*Free afternoon*

*14h – Departure of bus to Piana*

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**THURSDAY November 7**

**9:00 - Gas Physics, Star Formation and Galaxy Evolution – VII**

*Chair: Jérôme Pety*

KN **Godard** - Molecules and Turbulence: Following the energy trail

IT **Lesaffre** - Dissipation of compressible MHD turbulence

IT **Hily-Blant** - The small-scale structure of diffuse molecular ISM

*10:40 Coffee and poster viewing*

**11:10 - Gas Physics, Star Formation and Galaxy Evolution – VIII**

*Chair: Pierre Guillard*

IT **Hennebelle** - Formation of structures in the turbulent magnetized ISM

CT **Mocz** - Pre-stellar core formation from dense shocked regions in supersonic isothermal magnetoturbulence

IT **Kim** - Feedback regulated star formation

*12:30 LUNCH*

**15:00 - Gas Physics, Star Formation and Galaxy Evolution – IX**

*Chair: Philipp Girichidis*

IT **Lochhaas** - Multi-phase circumgalactic medium : fast winds, slow shells

CT **Lehmann** – Self-irradiated molecular shock waves: probing turbulent cascades

IT **Appleton** - Large-scale turbulence in action in multi-phase intergalactic gas in pairs and groups of galaxies

CT **Lisenfeld** – Radio continuum emission in the bridges of collisional galaxy systems

*16:30 Coffee and poster viewing*

**17:00 - Gas Physics, Star Formation and Galaxy Evolution – X**

*Chair: Matt Lehnert*

IT **Verhamme** - Lyman alpha emission around galaxies at high redshift

CT **Richings** - The effects of local stellar radiation on non-equilibrium ISM chemistry and ISM line diagnostics

IT **Noterdaeme** - Atomic and molecular hydrogen along quasar/GRB lines of sight

IT **Hopkins** - Cosmo-hydro simulations of galaxy formation (*video talk*)

**DISCUSSION 4:**

Have numerical simulations a predictive power?

Chairs : **Klessen, Lesaffre, Appleton**

*CONFERENCE DINNER*

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**FRIDAY November 8**

**8:45 - Turbulence, Plasmas, Magnetic Fields and Cosmic Rays – V**

*Chair: Ralf Klessen*

IT **Pety** – The Orion B project: from multi-line observations to GMC physics

CT **Brahimi** - Cosmic Rays and Interstellar medium turbulence dynamics

CT **Martin-Alvarez** - Tracing the origin and fate of magnetic fields in galaxies

IT **Dubois** - Dynamical effects of CR on ISM and galactic winds (*video talk*)

CT **Bennett** - Resolving shock heating, turbulence and the baryon cycle in high redshift massive galaxies

*10:30 Coffee*

**11:00 - Statistical analysis and modelling of data**

*Chair: Pierre Lesaffre*

IT **Ensslin** - The turbulent Galaxy via information field theory

CT **Levrier**- The Reduced Wavelet Scattering Transform, a comprehensive statistical description of the non-Gaussian ISM

CT **Beattie** - Reconstructing the three-dimensional density distribution of observed, strongly-magnetised, turbulent molecular clouds

CT **Durrive** - An analytical stochastic representation of 3D MHD turbulence

*12:15 LUNCH*

**14:30 DISCUSSION 5 :**

How will future observations challenge us?

Chairs : **Pety, Ensslin**

**15:00 - CLOSING LECTURE**

**Boulanger & Falgarone** : What have we learned (during the meeting)?

**15:30 END OF THE MEETING**

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