Cosmic Turbulence and Magnetic Fields: Physics of Baryonic Matter across Time and Scales

November 04 - 08, 2019

Web site

François BOULANGER
ENS, Paris, FR
francois.boulanger@ens.fr

Edith FALGARONE
ENS, Paris, FR
edith.Falgarone@phys.ens.fr

Gravity drives the evolution of the universe, but the gas dissipative dynamics is a central, yet unsolved, issue in the theory of galaxy formation. Current theories succeed in reproducing the observed mass distribution of galaxies only by introducing powerful stellar and black hole feedback that alleviate the rapid gas cooling and condensation into stars. An emergent alternative is that a large fraction of the gas internal energy is stored in turbulent motions instead of being radiated away and lost. Turbulence however adds a huge level of complexity to the physics of baryonic matter because cosmic turbulence involves magnetic fields and the plasma nature of the gas and because it pervades all the thermal phases from the hottest at more than one million Kelvin to the coldest at about 10 Kelvin in which stars form. The prodigious development of new facilities on the observational side, and the fast increase of computing power on the modeling side are opening up the field, calling for new multi-disciplinary approaches.

Eminent scientists in the field will animate the workshop. These include:
Alexandrova Olga (Paris Obs, FR), Appleton Philip (Caltech, US), Bhattacharjee Amitava (Princeton Univ, US), Bethermin Matthieu (LAM, Marseille, FR), Burkert, Andreas (Ludwig-Maximilians Univ München, DE), Andrei Bykov (Ioffe Inst, St. Petersburg, RU), Ensslin Torsten (MPA, Garching, DE), Faucher-Giguere, Claude-André (Northwestern Univ, US), Fialkov Anastasia (Kavli Inst for Cosmology, Cambridge, UK), Genzel Reinhard (MPE, Garching, DE), Godard Benjamin (Paris Obs, FR), Hennebelle, Patrick (CEA, FR), Hily-Blant Pierre [IPAG, Grenoble, FR), Hopkins Philip (Caltech, Pasadena, US), Kim Chang-Goo (Princeton Univ, US), Klessen Ralf (Heigelberg Univ. DE), Lehnert, Matthew (IAP, Paris, FR), Lesaffre Pierre (ENS, Paris, FR), Meidt Sharon (Gent Univ, BE), Miville-Deschênes Marc-Antoine (CEA, FR), Noterdaeme Pasquier (IAP, Paris, FR), Oh, Peng – (Univ of California, Santa Barbara, US)

Scientific Committee

François Boulanger (ENS, FR), Bruce Elmegreen (IBM, US), Edith Falgarone (ENS, FR), Ralf Klessen (Univ of Heidelberg, DE), François Levrier (ENS, FR), Jean-Loup Puget (ENS, FR), Linda Tacconi (MPE, DE), Romain Teyssier (Univ of Zürich, CH)

Organization Committee

François Boulanger (ENS, FR), Edith Falgarone (ENS, FR)

Application and registration

https://mist2019.sciencesconf.org/
Contact : mist2019@sciencesconf.org
Deadline Application : 2019, October 04