

Multi-Scale Structure Formation and Dynamics in Cosmic Plasmas

Workshop 15-19 April 2013

A great challenge of modern astrophysics is understanding the physics of structure formation at very different scales from planetary magnetospheres to the largest scale structures of the universe. Structure formation is always a highly non-linear process involving energy transfers between different constituents of cosmic matter and fields. Nonlinear plasma processes play a key role in many models of cosmic structure formation and their dynamics on a very broad range of scales. The Workshop will review observations of structure formation and dynamics on all scales: in situ and remotely from space, and also ground-based, from the magnetosphere to cosmological scales. A detailed assessment will be made of the physical processes underlying the formation of structures in these different physical environments. Special attention will be paid to the interaction between scales and similarities in the processes that shape the structures on the different scales. We will cover the theory and modelling of the physical processes that lead to the amazing variety and nontrivial dynamics of structures in cosmic plasmas.

The Workshop is convened by
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