

Contribution ID: 65

Type: **not specified**

Co-Evolution of Cosmic Rays and Thermal Plasma in Galaxy Clusters

Macroscale magnetized turbulence, acting jointly with microscale kinetic turbulence, can heat weakly collisional, high beta plasmas such as the ICM through a process known as magnetic pumping. This talk, which is complementary to a presentation by Francisco Ley, will discuss two effects and their relevance to energy balance in the ICM: enhancement of the heating rate in the presence of mesoscale turbulence, and extraction of a nonthermal tail that can form a seed population of cosmic rays.

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Session Classification: Friday morning: Cosmic rays