"What We Have Learned About Clusters From a Decade of Arcsecond-resolution X-ray Observations"

This talk will briefly review the main findings from Chandra high angular resolution observations of galaxy clusters, emphasizing results on cluster astrophysics. Chandra has discovered shock fronts in merging systems, providing information on the shock Mach number and velocity, and for best-observed shocks, constraining the microphysical properties of the intracluster medium (ICM). Cold fronts, a Chandra discovery, are ubiquitous both in merging clusters and in the cool cores of relaxed systems. They reveal the structure and strength of the intracluster magnetic fields and constrain the ICM viscosity. Combined with radio data, these observations also shed light on the production of ultrarelativistic particles that are known to coexist with thermal plasma. Finally, in nearly all cool cores, Chandra observes cavities in the ICM that are produced by the central AGN. All these phenomena will be extremely interesting for high-resolution SZ studies. Maxim