Emission Measure Imaging of Hot Gas in X-ray Clusters

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Abstract

We present images of the spatial structure of the emission measure distribution of the hot gas associated with clusters of galaxies. We will summarize the analysis of example observations using data taken with ACIS/Chandra with and without the HETG grating and also data taken with RGS/XMM-Newton. These results are derived with a novel numerical technique in the form of an "inverse Monte Carlo" method which deconvolves the instrumental effects in the data and constructs a nearly model independent "image" of the emission measure temerature distribution as a function of the spatial location within the cluster. The significance of this approach is the determination of the complete structure of the gas with a minimum of model dependent assumptions. This approach is in sharp contrast and is complementary to fitting models of low dimensionality.

CATEGORY: CLUSTERS OF GALAXIES