



X-RAY ASTRONOMY 2019

Current Challenges and New Frontiers in the Next Decade

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Can we quantify the hydrostatic bias using 2D temperature maps?

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The ICM often shows significant two-dimensional structure generated by mergers and/or AGN feedback. Thermodynamical 2D maps have been extensively used in the study of galaxy clusters thanks to their great potential to characterize the dynamical state of a system. However, to date they are only used for a qualitative analysis (e.g. the determination of a shock or a cold front) leaving their full potential unexploited. We will discuss how temperature maps can be used, not only to identify substructures or study asymmetries in the projected distribution, but also to investigate the possible biases in the determination of cluster properties, such as global gas temperature or total mass and the impact on the scaling relations.

We will present a first attempt to use the scatter of the 2D maps to probe possible biases in hydrostatic mass estimates as a function of cluster dynamical state.

Topic

Hot and diffuse baryons

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