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Chemical enrichment in galaxy clusters, groups, and elliptical galaxies hot atmospheres

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Whereas the extreme conditions of the first minutes after the Big Bang produced nearly all the hydrogen and helium in the Universe, the most common heavier elements - or metals - are synthesized in the core of stars and in supernova explosions. On the other hand, the very hot and diffuse intracluster medium (ICM), glowing in X-ray and detected in the large gravitational potential well of galaxy clusters and groups, is also rich in metals. This means that the building blocks of life, synthesized by billions of supernovae over cosmic ages, are present even at the largest scales of the Universe, as they continuously enrich the ICM.

In this talk, we will see how the abundance measurements of key-elements in the hot atmospheres of galaxy clusters, groups, and ellipticals observed with the current X-ray observatories helps to understand how and which epoch of the cosmic history the ICM got enriched.
Finally, I will discuss how future X-ray observatories will push forward our understanding of the ICM enrichment.

Topic

Hot and diffuse baryons

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