Abundance measurements in the intracluster medium: consequences of spectral code improvements

The intracluster medium (ICM) is rich in metals, which were synthesised within cluster and group members, and giant elliptical galaxies by both Type Ia and core-collapse supernova explosions. Deriving the integrated ratios and spatial distribution of these elemental abundances provides invaluable information on the physics of supernovae themselves, as well as on the chemical history of clusters, groups, and ellipticals over cosmic time. Measured with CCD instruments, however, not all these metal lines could be individually resolved and our abundance measurements rely mostly on the calculations of spectral codes used to fit the ICM spectra. In this talk, we focus on how major improvements of the spectral code SPEX have recently changed our picture of the enrichment in the hot atmosphere of these systems. Comparing the abundance measured by Hitomi SXS (offering an unprecedented spectral resolution) and by the more moderate resolution EPIC instruments onboard XMM-Newton, we discuss the lessons learned and the potential feasibilities and challenges in the upcoming era of Athena.