



# X-RAY ASTRONOMY 2019

*Current Challenges and New Frontiers in the Next Decade*

8-13 September 2019  
CNR/INAF Research Area, Bologna, Italy

Contribution ID: 38

Type: **Poster**

## The evolution of XLF of Brightest Cluster Galaxies

*Friday, 13 September 2019 18:50 (2 minutes)*

We present a systematic study of the nuclear X-ray luminosity function (XLF) of Brightest Cluster Galaxies (BCGs) for a wide range of halo masses, exploiting the entire Chandra archive (~600 BCGs). Thanks to the ~1 arcsec angular resolution, we are able to trace their radiatively-efficient nuclear activity through cosmic epochs from  $z=0.1$  to  $z>1$ , and to investigate the properties of the surrounding ICM. This work complements the measurement or radio emission of BCGs in the studies of feedback mechanisms across cosmic epochs in massive galaxy clusters, showing an increase in the feedback intensity with redshift, and, possibly, a switch in the feedback mode from mechanical to radiative. Our final goal is to constrain the cycle of hot and cold baryons in the core of groups and clusters of galaxies, including the origin of the feeding gas, the accretion regime, and the effects of feedback onto the surrounding ICM and on the star formation in the BCGs.

### Topic

Active Galactic Nuclei: accretion physics and evolution across cosmic time

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**Session Classification:** POSTER SESSION