

# Relationship between gamma-ray loudness and X-ray spectra of radio galaxies

Thursday, 28 October 2021 09:30 (20 minutes)

Radio galaxy (RG) is one of AGNs. The Fermi has detected about 60 RGs, but it is only 10% of part of the RGs detected in the radio band. In this study, we investigated the difference in their X-rays properties between GeV-loud and GeV-quiet RGs. In addition to 38 RGs detected by Fermi with available X-ray data, we selected 25 RGs shown in Mingo et al. 2014 and Massaro et al. 2015 as GeV-quiet RGs. We performed X-ray spectral analysis of these 63 RGs using data from the XMM-Newton, Chandra, NuSTAR, and Swift. As a result, the distribution of photon indices and luminosities showed no obvious difference between GeV-loud and GeV-quiet RGs. On the other hand, for the distribution of the absorption column density  $N_{\text{H}}$ , about half of the GeV-quiet RGs have  $N_{\text{H}}$  larger than  $10^{22} \text{cm}^{-2}$  and most of the GeV-loud RGs have  $N_{\text{H}}$  smaller than  $10^{22} \text{cm}^{-2}$ . This can be explained by that jet of GeV-loud RGs are observed from a smaller viewing angle and thus the disk/corona X-ray emission is not blocked by the torus, resulting in a smaller absorption. On the other hand, jet of GeV-quiet RGs are observed from a larger angle and thus the disk/corona X-ray emission is easily blocked by the torus, resulting in a bigger absorption.

## Please choose the session this abstract belongs to

Galactic sources

**Primary author:** KAYANOKI, Taishu (H)

**Co-author:** Mr FUKAZAWA, Yasushi (Hiroshima University)

**Presenter:** KAYANOKI, Taishu (H)

**Session Classification:** Session 2