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## Unravelling the origin of extended X-ray emission surrounding FR II radio galaxies

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We carried out an extensive X-ray analysis of the surface brightness profiles of a sample of FR II radio galaxies. We aimed at assessing the extension of the X-ray diffuse emission along the radio structure as well as in the cross-cone direction perpendicular to the radio axis. We also addressed the hotspot detection significance over the local X-ray background. To obtain a complete characterization of the selected FR II radio galaxies, we compared X-ray images with radio maps at  $\sim 100$  MHz and investigated the possible presence of a galaxy cluster/group surrounding them by inspecting optical and infrared observations. The sample of FR II radio galaxies was selected from the radio sources of the Third Cambridge catalog observed during the Chandra snapshot survey. These observations span a range of exposure times between 8 and 20 ks and were obtained during Chandra Cycles A09, A012, A013, A015, A017 and A029. As a preliminary result, we find that around 40% of the sources clearly show extended X-ray emission up to hundreds of kpc both along the radio axis and in the cross-cone direction. Additionally, the presence of diffuse X-ray emission with no counterparts at radio frequencies  $\sim 1$  GHz shows tentative evidence of CMB quenching.

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