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Numerical simulation on the redistribution of AGN jet tails in merging cluster: Example of Abell 514

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The bulk motion of ICM determines the morphology of AGN jet tails in galaxy clusters. In this study, we use idealized simulations to understand the formation process of the 800 kpc-size bent AGN radio jet tail that we recently discovered in the merging cluster Abell 514. By comparing the observed X-ray morphology with simulations, we constrain the merger history of Abell 514 as a ~2:1 mass ratio collision. We will present how injected jet clouds are redistributed during cluster merger and discuss the remaining challenges in explaining Abell 514.

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