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The stellar size and morphology of X-ray-selected Active Galactic Nuclei Observed with JWST.

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Theories of the formation of massive galaxies suggest that active galactic nuclei (AGN) play an important role in their evolution by shutting down star formation, which slows down stellar mass growth. However, the size and shape of galaxies during the AGN phase are not well established. Such information may shed light on the formation pathways in which galaxies evolve. Thanks to the high-angular resolution and sensitivity in the near-infrared of JWST NIRCAM, it is now possible to resolve the shape and sizes of galaxies during the bulk of stellar mass growth. Here, we present our results on the size and mass of X-ray-selected AGN detected from the C-COSMOS survey within the footprint of the COSMOS-Web program. Using our custom JWST pipeline, we show that most X-ray-selected AGN reside in massive galaxies with a significant bulge component but the imaging also shows signs of substructure such as disk, bars, and arms. Compared to the typical galaxy population, their size and mass relationship is sharper than that of star-forming galaxies.

Section

Galaxy/Extragalactic

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