

Abstract Submitted  
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**Simulations of Episodic AGN Feedback Conditions in Elliptical Galaxies** DAVID RIETHMILLER, Ohio University, THOMAS STATLER, Ohio University, National Science Foundation — The exact nature of mechanisms for AGN feedback and cooling in elliptical galaxies is to date uncertain. However, observed correlations among X-ray properties of ellipticals may allow us to judge how well simulated feedback and cooling prescriptions reproduce X-ray observations. Of particular interest is the coupling of AGN power with X-ray morphology; recent investigations have found that the AGN X-ray luminosity is directly correlated with the morphological asymmetry in the gas, which could be explained by episodic AGN activity. As an initial step in exploring such feedback in ellipticals, we present here a series of hot galactic gas simulations executed with the smoothed particle hydrodynamics (SPH) code GADGET2. Our setup places gas particles inside a fixed static dark matter potential. The gas is disturbed by an accretion-fed AGN which may return energy with varying efficiency, thermally or kinetically (or both), with or without jets. Our aim is to investigate under what conditions we observe episodic AGN activity consistent with the AGN power-morphology relation.

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