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Numerical study of AGN feedback

Tuesday, January 6, 2026 11:00 AM (25 minutes)

In this talk, I will review our series of works on AGN feedback in a galactic scale based on the MACER framework. The key features of the MACER model are that: 1) it focuses on the galactic scale; 2) the inner boundary of the simulation domain is smaller than the Bondi radius thus we can reliably determine the mass accretion rate of the black hole; and 3) the state-of-the-art accretion physics is adopted in the model, including the exact description of radiation, wind, and jet in both the quasar and radio modes. We will discuss the galaxy quenching mechanism, the correlation between BH accretion rate and SFR, the X-ray surface birghtness profile, the (cold)gas fraction issue, and the cooling flow problem in galaxy cluster.

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