

Abstract Submitted
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Radiative Relativistic Reconnection LORENZO SIRONI, American Physical Society — Relativistic jets of blazars and magnetized coronae of highly accreting black holes routinely display non-thermal emission signatures, including fast and bright flares of high-energy emission. Yet, the engine responsible for accelerating the emitting particles to ultra-relativistic energies is still unknown. With fully-kinetic particle-in-cell (PIC) simulations, we study the physics of relativistic magnetic reconnection where the magnetic energy of annihilating field lines is even larger than the particle rest mass energy in the radiative regime where the particle cooling time is shorter than the lifetime of the system. We show that radiative relativistic reconnection offers an intriguing explanation for (1) high-energy flares in blazar jets, and associated rotations in the optical polarization vector; and (2) the hard-state spectra of black hole X-ray binaries and Active Galactic Nuclei.

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