

Abstract Submitted
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Radiative Magnetic Reconnection in Astrophysics¹ DMITRI UZDENSKY, Univ of Colorado - Boulder — Traditional magnetic reconnection has mostly focused on relatively tenuous solar-system environments, where radiation can be ignored. In contrast, in many astrophysical situations the energy density in the reconnection region is so high that radiation becomes important. I will give an overview of our recent progress in understanding radiative magnetic reconnection — a new frontier in plasma astrophysics. I will describe how the key radiative effects, such as radiative cooling, radiation pressure, and Compton drag, affect reconnection dynamics and particle acceleration. I will illustrate these ideas with specific astrophysical examples, including magnetar flares; black-hole accretion-disk coronae; reconnection powering high-energy emission in pulsar magnetospheres; and GeV-range gamma-ray flares in the Crab Nebula.

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