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Guide Field Reconnection Turbulence and Coronal Heating M.J. PUESCHEL, University of Wisconsin-Madison, D. TOLD, Max Planck Institute for Plasma Physics, P.W. TERRY, University of Wisconsin-Madison, F. JENKO, Max Planck Institute for Plasma Physics, E.G. ZWEIBEL, V. ZHDANKIN, University of Wisconsin-Madison, H. LESCH, University Observatory Munich — Magnetic reconnection is a prime contender for explaining plasma heating in the solar corona. This work focuses on turbulent reconnection simulations in the strong-guide-field limit, where the gyrokinetics both captures all relevant physical effects and is numerically efficient. Continuously replenished current sheets force a quasi-stationary turbulent state, where significant levels of $\mathbf{j}\cdot\mathbf{E}$ heating can be measured. In addition, plasmoids are observed to form in the turbulence, causing secondary reconnection events through mergers. Under coronal conditions, the volumetric heating rate is evaluated as 1.5×10^{-3} erg cm^{-3} s^{-1}, in good agreement with observations. This value scales as, in particular, the reconnecting field to the power of 1.8, and the characteristic current sheet width to the power of 0.75. Moreover, heating bursts associated with plasmoid mergers conform with time scales associated observationally with nanoflares. For further details on this work, as well as on the emergence of temperature anisotropies, see [M.J. Pueschel et al., *Magnetic Reconnection Turbulence in Strong Guide Fields: Basic Properties and Application to Coronal Heating*, accepted for publication in Astrophys. J. Suppl. Ser.].

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