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Diagnostics and fine structuring of coronal heating from 3D MHD modeling of twisted/braided coronal loops

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Photospheric motions drive the twisting and braiding of coronal magnetic field confining loop plasma. Magnetic stress eventually leads to reconnection and conversion of magnetic energy into heat through current dissipation. We model this process by fully 3D MHD loop simulations and derive observables that directly track the dissipating currents, therefore providing evidence for the structuring and timing of the energy release and constraints for the observations.

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