Self-consistent coronal heating models in an MHD avalanche

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There are a wide range of coronal loop models that solve the thermal energy balance along individual field lines. These models provide a relative easy way to compare computed temperatures and densities with observations. However, most require the specification of the coronal heating term. In this way it is possible to place constraints of the actua heating mechanism. 3D MHD models provide the opportunity to investigate the physical processes involved in converting magnetic energy into heat. I will use MHD simulations and present some recent results on the release of magnetic energy in a multi-stranded coronal loop. An MHD avalanche can occur and many independent heating events result from the subsequent magnetic reconnection. The heating released during the MHD simulation can be compared to the heating required in nanoflare trains, using in 1D loop models.