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Intermittent heating events in the corona

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Abstract. The solar corona is observed by several instruments in different wavelength. Despite a wide range of observations are available the heating process is not yet fully understand. We employ a 3D MHD numerical model to investigate the temporal and spatial distribution of the coronal heating. The model includes an active region and solves the basic MHD equations self consistently. Due to photospheric motions magnetic field lines are braided in the upper atmosphere. There currents occur which heat the corona by their dissipation. We find a intermittent processes comparable to the nanoflare heating proposed by Parker (1975). Categorized in events with various length and size and energies, they are used to derive distribution function. The slope of the power law compares with observations. We show distribution functions for events observable in different wavelength filter, e.g. for the XRT or EIS instruments on board HINODE. Therefor we synthesize the emissivity for various emission lines and analyze the spatial and temporal distribution of the brightenings.