

# TURBULENT HEATING OF CORONAL ACTIVE REGIONS: STATISTICS OF DISSIPATION EVENTS

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The internal dynamics of coronal loops in active regions is numerically simulated within the reduced MHD approximation. The application of a stationary velocity field at the photospheric boundary leads to a turbulent stationary regime after several photospheric turnover times. This regime is characterized by a broadband power spectrum and heating rate levels compatible with the heating requirements of active region loops.

The energy dissipation rate as a function of time displays a complex superposition of impulsive events, which we associate to the so-called nanoflares. A statistical analysis of these events yields a power law distribution as a function of their energies, which is consistent with those obtained for flare energy distributions reported from X-ray observations. We also study the distributions of peak dissipation rates, durations, and waiting times between events.