Investigating the response of coronal loop plasma to nanoflares heating using RADYN simulations

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We present the results of 1D hydrodynamic simulations of coronal nanoflare loops heated by beams of non-thermal electrons as well as thermal conduction using the RADYN code. The aim is to investigate the importance of the input parameters and the details of the heating mechanism on the model predictions. In particular, we examine the impact of different electron energy distributions and initial physical conditions of the loops on the atmospheric response.

We derive the intensity and Doppler shifts of chromospheric, transition region and coronal lines, which can then be directly compared with spectroscopic and imaging observations from IRIS and SDO/AIA.