On The Bright Loop Top Emission In Post Eruption Arcades

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The observations of post eruption arcades (PEAs) in X-rays and EUV reveal strong localised brightenings at the loop top regions. The origin of these brightenings and their dynamics is not well understood to date. Here, we study the dynamics of PEAs using one-dimensional hydrodynamic simulations together with forward modelling of specific spectral lines observed by the Extreme-Ultraviolet Imaging Spectrometer (EIS) on board Hinode with the focus on the understanding of the formation of localised brightening at the loop top. Our findings suggest that these brightenings are the result of collisions between the counter-streaming chromospheric evaporation from both the foot points. The parametric study of the input flare heating shows that stronger loop top brightening is more likely to occur in hotter active loops.

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