What drives the hot solar corona?

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Complex magnetic landscape at the footpoints of hot loops in active region cores

- We found that a majority of coronal loops hosting hot plasma have at least one footpoint rooted in regions of interacting mixed magnetic polarity at the solar surface.

- Our observations suggest that interactions of magnetic patches of opposite polarity at the solar surface and the associated energy release during reconnection are key to impulsive coronal heating.

Opposite-polarity magnetic field within 3 Mm from the footpoint

Magnetic flux variations at the base of hot loops

Chitta et al. (2020) A&A, 644, A130

Spectroscopic signatures of magnetic reconnection at the base of hot coronal loops