

Anti-parallel EUV flows observed along active region filament threads with Hi-C

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Plasma flows within prominences/filaments have been observed for many years and hold valuable clues concerning the mass and energy balance within these structures. Previous observations of these flows primarily come from H-alpha and cool EUV lines (e.g., He II 304 Å) where estimations of the size of the cool prominence threads has been limited by the resolution of the available instrumentation. Evidence of 'counter-steaming' flows has previously been inferred from observations but now, for the first time, these flows have been directly imaged within the corona. In this work we present observations of an active region filament observed with SDO/AIA and Hi-C that exhibits dynamic anti-parallel flows along adjacent threads within the structure. The ultra-high spatial resolution of Hi-C allows the individual flow velocities to be measured and complementary data from AIA provides context and allows temperature analysis to take place. Measuring the flow speeds, the spatial scale of the threads, and their emission in different temperature regimes allows us to comment on the physical mechanisms taking place and can help us to understand how these flows relate to the stability of the filament as a whole.