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The coronal braiding structures detected in the machine-learning upscaled SDO/AIA images

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we show the evolutions of the separated strands within the apparent single coronal loops observed in Atmospheric Imaging Assembly (AIA) images. The loop strands are detected on the upsampled AIA 193 images, which are generated using a super-resolution convolutional neural network, respectively. The architecture of the network is designed to map the AIA images to unprecedentedly high spatial resolution coronal images taken by High-resolution Coronal Imager (Hi-C) during its brief flight. At some times, pairs of individual strands appeared to braid with each other and subsequently evolved to become pairs of almost parallel ones with their segments having exchanged totally. These evolutions provide morphological evidence supporting occurrences of magnetic reconnections between the braiding strands, which are further confirmed by the occurrences of the transient hot emissions (>5 MK) located at the footpoints of the braiding structures.