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EUV IMAGING OBSERVATIONS OF PROPAGATING INTENSITY FLUCTUATION ALONG CORONAL LOOPS AND PLUMES

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Intensity fluctuations propagating along coronal structures have been usually referred as either mass outflows or slow-mode magneto-acoustic waves. However, the mechanisms that correlate these two phenomena as supplier of mass and energy to the solar corona and fast solar wind is still unclear. In this work we present kinematic measurements of propagating intensity fluctuations observed in extreme ultraviolet (EUV) coronal images along coronal loops and plumes, in an attempt to characterize these brightness inhomogeneities in terms of flows and/or propagating compression waves. The EUV images are obtained by the high spatial and temporal resolution observations available from the Extreme Ultra-Violet Imagers (EUVI) onboard the Solar TErrestrial RElationships Observatory (STEREO) and the Atmospheric Imaging Assembly (AIA) aboard the Solar Dynamics Observatory (SDO). The kinematical evolution is analyzed using height-time intensity maps (J-maps) obtained by placing virtual slits along the structures of interest comprising both open and close coronal structures, namely coronal loops and polar plumes. Due to the weak relative intensity signature of the intensity fluctuations to the background, the images are cleaned and enhanced using a multi-resolution analysis technique to better identify the propagating intensity disturbances along the different coronal structures. We also employ a wavelet analysis technique to evaluate the pseudo-periodical nature exhibited by the phenomenon under study.