
Magnetic properties of coronal pseudo-streamers

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Abstract

Like helmet streamers, pseudo-streamers (or unipolar streamers) appear as radially-extended regions of enhanced density in white-light coronagraphs, but their magnetic properties are quite different. A helmet streamer occurs at a meeting of opposite polarity open field, whereas the field in a pseudo-streamer is all the same polarity, although the open field still belongs to two separate flux domains. A basic pseudo-streamer consists of two extended magnetic arcades next to each other surrounded by open field of the same polarity as the outer feet of the arcades. A separator is present above the arcades where the four flux domains meet. Pseudo-streamer topology can be difficult to determine in the corona due to line of sight effects. We present initial work on a topological pseudo-streamer study that aims to identify pseudo-streamers and similar features with coronal polarization measurements, which directly probe the magnetic field. We model several magnetic topologies and their coronal polarization signatures and compare these to multiple observations of pseudo-streamers.

Keywords: coronal polarization, pseudo, streamers, topology

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