

What if the evolution of auroral forms does not reflect magnetospheric processes?

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We often find auroral images very helpful for diagnosing magnetospheric processes, especially from a global point of view, supplementing spatially sparse satellite observations. The assumption that is very often made, if not explicitly, is that the temporal and spatial development of auroral forms reflects that of the corresponding magnetospheric processes. Although this assumption may be reasonable in many cases, caution needs to be exercised since the aurora is a manifestation of complex coupling between the magnetosphere and ionosphere, and the ionosphere does not always respond passively. In this presentation I shall discuss, with an actual example, how our perspective would change if the foundation of this assumption is not as solid as we generally consider.

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