Dynamics of auroral intensification as an output of magnetosphere-ionosphere system

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Using TV data observations we analyse the developing of different kinds of auroral intensifications. The set of TV images is considered as an output of magnetosphere-ionosphere dynamical system. Aurora is a manifestation of some magnetospheric processes, and it is supposed that auroral structure is connected with structure of spatial region of these processes action. To characterise the complicity of the auroral image we use the fractal dimension spectrum of lines of equal intensity. By the spectrum the auroral form has been revealed from background noise, and the most variable intensity level has been selected. The dimension for the most variable intensity level has been used as a numerical characteristic of spatial irregularity of the region.
The modification of Grassberger-Procacci method has been used for searching of the low-dimensional dynamics of the magnetosphere-ionosphere system which generates the image set. This our consideration is mainly aimed on difference between pseudo-breakups and major substorm onsets. It was found: 1) There is no clear boundary between pseudo-breakups and simply brightening of the auroral arc. 2) Correlation dimensions for pseudo-breakup and breakup intensifications are the same (~2.7-2.8), however this dimension is differed from one obtained for pulsing patches. 3) There are some difference between pseudo-breakup and breakup intensifications: the spatial scale of self-similarity for pseudo-breakups is smaller than for breakups.
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