

Dynamic cell models of VLF chorus generation

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We consider some cell models to explain a power-law distribution of time intervals between VLF chorus elements, revealed by the MAGION satellite data. This form of a distribution function usually used as a evidence that collective dynamics of a system is in "punctuated equilibrium" mode of self-organization. However, by physical reasons the punctuated equilibrium model cannot be used directly to explain self-similarity of VLF/ULF chorus emissions. To explain dynamics of chorus generation we worked out two mathematical models and found, that the observed power-law distribution in these models results from non-linearity of chorus generation mechanism.