



On the possibility of the Pc1 artificial excitation by a powerful radio wave

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The possibility of generation Alfvén waves in a band Pc1 at action on a magnetosphere of a modulated powerful radio wave was investigated. The system of equations, which is described interaction of slow magnetohydrodynamic motions (Alfvén waves) with fast motions (transversal electromagnetic waves) were obtained. The equation for Alfvén waves is described by a modified nonlinear Schrödinger equation (MNLS). The right part of MNLS takes into account ponderomotive forces at action modulated radio wave on an ionosphere. In waves, which are described by MNLS, the oscillations of density are not equal to zero. It was shown, that the parametric excitation nonlinear Alfvén waves on a modulation frequency of a powerful radio wave is possible. The observed effects of generation of pulsations Pc1 during of the transmitter work can be understood within the framework of offered model. The work was supported by the Russian Foundation of Basic Researches (project 03-05-64545).