

2011 Workshop: Nonlinear Plasma Effects

Long title

Nonlinear Plasma Effects in Auroral/Subauroral Plasmas

CEDAR-GEM

Conveners

Evgeny Mishin

Anatoly Streltsov

Description

The objective of this workshop is to make an assessment of the contribution of nonlinear plasma processes to the dynamics of the magnetosphere-ionosphere system with the emphasis on their effects on the energy transport and release in the ionosphere and magnetosphere at auroral and subauroral latitudes. Possible topics of discussion will include (but are not limited to): Can the wave contribution compete with the standard sources like collisional heating in the ionosphere and in the ring current/plasmasphere? What is the role of nonlinear plasma processes in the formation of SAID/SAPS, small-scale auroral structures, and interaction of substorm injections with the plasmasphere? What is the contribution of M-I coupling instability to the substorm development and small-scale currents? Invited speakers will summarize recent progress in theory/modeling/observations of wave plasma processes at auroral and sub-auroral latitudes and discuss future directions.

Justification

These questions are of great interest for both communities and have been discussed in previous CEDAR and GEM workshops. Recent satellite and ground-based observations and modeling results have given enough evidence to the important role of nonlinear plasma effects in the auroral/subauroral M-I system and thus warrant a joint discussion.

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