

ASTROPHYSICS SEMINAR

Tuesday, 5 October 2010 at 14:00

Auroral Particle Acceleration

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Abstract. The aurora provides a local plasma laboratory for the study of processes of astrophysical significance. The conversion of electromagnetic energy into particle kinetic energy that powers the aurora is a universal plasma process thought to drive particle acceleration in a wide variety of contexts. The collision of particles, accelerated through these processes, with the upper atmosphere drives emission of auroral light in X-rays, ultra-violet and visible light. In this presentation I will show movies of these emissions and satellite observations of the acceleration process. Along the way I will describe physical models based on these observations to show how the particle acceleration processes drive the 'dancing' auroral light shows which are so well known - as well as indicating those issues which even after several decades of intensive study remain unknown. Time permitting I will also speculate on the role of similar processes in astrophysical contexts more familiar to the interests of the ISDC.

Additional Information

The seminars are given in the ISDC "Pavillon" building
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