

Plasma Physics Seminar

UCLA College | Physical Sciences
Physics & Astronomy

Physics & Astronomy Building (PAB) Room 4-330
Friday January 30th at 12:30 PM
Via Zoom: <https://ucla.zoom.us/my/pab4330>

How Alfvén waves drive auroral electron acceleration?

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On Earth and other planets, auroras are created by fast electrons precipitating into the upper atmosphere. These electrons are accelerated in space by electric fields that are parallel to the background magnetic field. It is well known that two types of such electric fields exist: quasi-static and wavy. The latter is the parallel electric field of Alfvén waves at kinetic scales. The origin of the quasi-static electric field, however, has long remained an open question. In this talk, I will present our works showing that quasi-static auroral electric fields are also sustained by Alfvén waves, and compare the differences and similarities between the two types of auroral acceleration processes. The physical implications of these results will also be discussed.

Host: Derek Schaeffer