

ISSI Team 347

Particle Acceleration in Solar Flares and Terrestrial Substorm

1st meeting in Bern
2016 Feb. 15-19

Key Science Questions

1. How energies are partitioned between thermal and non-thermal particles in the key regions of solar flares and the Earth's magnetosphere?
2. How energies are transported (in the forms of Poynting, enthalpy and bulk kinetic energy fluxes) to the obstructions (i.e., flaring loops and the chromosphere, the dipole magnetosphere and the ionosphere)?

AGENDA

Monday Morning, 9AM~

INTRODUCTION

- Coffee time
- Motivation and objectives (Oka)

Monday 10AM ~, Monday Afternoon, Tuesday Morning

LOW ALTITUDE (moderator: Imada)

inner magnetosphere, chromospheric footpoint

- Waves in flares (including a report on Lyndsay's latest ISSI team project) (Fletcher)
- White light flare (Kuhar)
- Short presentations
 - EUV spectroscopy of non-thermal ions (Fletcher on behalf of Natasha Jeffrey)
 - The ERG mission (Miyoshi)
- Rapid acceleration of MeV electrons through resonance with the fast mode waves (Miyoshi)
- Waves in the inner magnetosphere (Pumping up particle energy density in the magnetosphere with low frequency waves) (Chaston)
- Open Discussion

SKYPE LECTURE (Monday Evening 4-5 PM)

- Theory of kappa and flat-top distributions ([Livadiotis](#))

Tuesday Afternoon and Wednesday Morning

OBSTRUCTION (moderator: Battaglia)

flow-braking, current disruption region, (above-the-)looptop source

- Electron acceleration in the magnetotail flow-braking region ([Khotyaintsev](#))
- Ion acceleration in the magnetotail flow-braking region ([Retinò](#))
- Electron energy partition during flares ([Oka](#))
- Flare electron distributions inferred from AIA+RHESSI ([Battaglia](#))
- Open Discussion

Wednesday Afternoon and Thursday Morning

RECONNECTION (moderator: Imada)

- Test particle orbits in MHD fields ([Birn](#))
- Ion and electron acceleration in the magnetotail as observed by Geotail ([Imada](#))
- Evolution of electron distributions in the magnetotail as observed by THEMIS ([Oka](#))
- Magnetic nulls in 3D reconnection ([Eriksson](#))
- Effect of collisionality and partial ionization ([Imada](#))
- Open Discussion

Thursday Afternoon

GENERAL DISCUSSION (moderator: Battaglia)

- Comparison between flares and substorms
- Summary and Future tasks

Friday Morning

SPECIAL SESSION

- dayside reconnection by MMS ([Khotyaintsev?](#) [Retinò?](#))
- bow shock by MMS ([Oka?](#))
- other topics
- work time ? chocolate time??