INTERNATIONAL SPACE SCIENCE INSTITUTE

ISSI International Team #441	**HEROIC Team**	***by A. Papaioannou et al.***

High EneRgy sOlar partICle events analysis (HEROIC)

ISSI International Team #441

First Team Meeting

26-30 November 2018

Agenda

Location | ISSI, Hallerstrasse 6, Bern | Room 34, 3rd floor

INTERNATIONAL SPACE SCIENCE INSTITUTE

ISSI International Team #441	**HEROIC Team**	***by A. Papaioannou et al.***

http://www.issibern.ch/teams/heroic/

Monday, 26 November 2018

Observations and Data

Time Table	Title
09:30-09:40	Welcome | *M. Falanga*
09:40-09:50	Project Outline | *A. Papaioannou*
09:50-10:00	Brief presentation of the Team members | *All*
Measurements of relativistic SEP events (GLEs, sub-GLEs)	
10:00-10:30	Spacecraft particle measurements (SOHO, ACE, GOES) | *P. Kühl, B. Heber*
10:30-11:00	Multi-spacecraft measurements (Helios, STEREO, PSP) | *D. Lario*
11:00-11:30	PAMELA measurements | *G. Bazilevskaya, A. Bruno*
11:30-12:00	AMS02 measurements | *V. Bindi, C. Corti*
12:00-12:30	Neutron monitor measurements | *I. Usoskin*
12:30-14:00	**Lunch**
14:00-14:30	EM signatures (X-rays, radio, FERMI) | *K.-L. Klein*
14:30-16:00	**Team work:** Towards a synthesis of observations
16:00-16:30	Summary of the observational data (*Possibly split to groups*) • Compile a list of events for further analysis | *Preliminary* • Availability of data for these events • Possible shortcomings/issues in the data • Discussion and Conclusions
16:30-17:00	**Assignment of Tasks to the Team members** (until the second meeting) related to the synthesis of observations
17:00	***Welcome Reception provided by ISSI***

Tuesday, 27 November 2018

Modeling of relativistic SEP events

Time Table	Title
09:30-10:00	Modeling of GLEs and sub-GLEs | *A. Mishev, Y. Balabin*
10:00-10:30	Compare different modeling efforts for GLEs | *R. Bütikofer*
10:30-11:00	The effect of the terrestrial magnetic field geometry on the cutoff rigidity of energetic particles | *K. Herbst*

11:00-11:30	GLE inversion from the Sun to the Earth | *B. Heber*
11:30-12:00	GLEs and sub-GLEs definition and further perspectives | *S. Poluianov*
12:00-13:30	**Lunch**
13:30-16:00	**Team work:** Comparison of current models and identification of required improvements
16:00-16:30	Summary of different models • Discuss basic outputs - what is next? • Possibly incorporate s/c and high energy data (PAMELA | AMS02 | HEPAD) in the models • What are the necessary improvements, how will these be accomplished? • Compile a list of events for further analysis | *Final* Discussion and Conclusions
16:30-17:00	**Assignment of Tasks to the Team members** (until the second meeting) related to the modeling of selected events (GLEs, sub-GLEs)

Wednesday, 28 November 2018

Comparative studies

Time Table	Title
09:30-10:00	Relativistic SEP events and their parent solar sources | *A. Belov*
10:00-10:30	SEP parent sources for low and high-energy events | *E. Cliver*
10:30-11:00	Relativistic and mildly relativistic SEP events: a comparison | *A. Papaioannou*
11:00-11:30	What controls the productivity of high energy particles | *R. Vainio* (via Skype)
11:30-12:30	**Discussion | What is it that we can learn from statistical, comparative studies for SEP events?**
12:30-14:00	**Lunch**
14:00-16:00	**Team work:** Statistical studies, GLE | sub-GLE characteristics *vs* parent solar event characteristics
16:00-16:30	Summary of the outcome from comparative studies • Discuss basic statistical findings - what is next? • Possible shortcomings/issues in such studies Discussion and Conclusions
16:30-17:30	**Assignment of Tasks to the Team members** (until the second meeting) related to the implementation of statistical studies for actual samples of events (GLEs, sub-GLEs)

INTERNATIONAL SPACE SCIENCE INSTITUTE

ISSI International Team #441	**HEROIC Team**	***by A. Papaioannou et al.***

Thursday, 29 November 2018

Particle Acceleration Mechanisms

Time Table	Title
09:30-10:00	Signatures of Coronal Acceleration | *K.-L. Klein*
10:00-10:30	Parameters of CME-driven shock waves: modeling and observations | *A. Kouloumvakos*
10:30-11:00	CME shock acceleration | *A. Afanasiev*
11:00-12:30	**Discussion | Particle Acceleration Mechanisms, current understanding, limitations and way forward**
12:30-14:00	**Lunch**
14:00-16:00	**Team work:** Towards a comprehensive understanding of particle acceleration mechanisms
16:00-16:30	Summary of the particle acceleration mechanisms • Discuss plausible explanations for case studies • Possible shortcomings/issues in the current understanding • Interpretation of new data sets (FERMI/LAT) and a shift of the current paradigm Discussion and Conclusions
16:30-17:30	**Assignment of Tasks to the Team members** (until the second meeting) related to the combination of particle acceleration mechanisms to actual events (GLEs, sub-GLEs)

Friday, 30 November 2018

Summary and Assignments

Time Table	Title
09:30-12:30	**Summary of the Meeting** – Action Items and Task Assignment for the coming months – Scheduling of a bi-monthly meeting plan (draft)
12:30-14:00	**Lunch**
14:00-16:00	– Discussion on peer-reviewed publication(s) – AoB