

ISSI Workshop on Electron Kinetic Physics: The Next Frontier in Space and Astrophysical Plasmas

22-26 April 2024

Third (and last) Circular

The ISSI Workshop on switchbacks is now one week away and we are looking forward to a lively meeting in Bern. Here is more detailed information about the programme, the scope, etc. The latest updates, including the list of abstracts and participants can be found in the workshop web page: <https://workshops.issibern.ch/electron-kinetic-physics/>. During and after the workshop we shall often rely on documents that are on the ISSI cloud: <https://next.issibern.ch/f/4674689>

Programme: The workshop will be divided into three parts:

	Monday 22 April	Tuesday 23 April	Wednesday 24 April	Thursday 25 April	Friday 26 April
8:30-9:00	registration	coffee chat	coffee chat	coffee chat	coffee chat
9:00-12:30	Welcome & Introduction (9:00-9:30) <i>T. Dudok de Wit & D. Verscharen</i>	Plenary session: Theme 1 <i>Chairs: J. Stawarz & K. Klein</i>	Plenary session: Theme 2b <i>Chairs: R. Nakamura & O. Pezzi</i>	Plenary session: Theme 3 <i>Chairs: A. Simionescu & D. Verscharen</i>	Plenary session <i>Chairs: D. Perrone & T. Dudok de Wit</i>
	Stage-setting talks Theme 1 <i>R. Wicks & A. Artemyev</i>	Plenary session: Theme 2a <i>Chairs: R. Nakamura & O. Pezzi</i>		Breakout working session 1	
12:30-14:00	lunch	lunch	lunch	lunch	lunch
14:00-17:30	Stage-setting talks Theme 2 <i>G. Brunetti & S. Schwartz</i>	Excursion to the Swiss Plasma Center (Lausanne) by coach 13:45-18:30 Coach departs from the Kunstmuseum (Hodlerstrasse 8)	Plenary session: Theme 2c <i>Chairs: R. Nakamura & O. Pezzi</i>	Breakout working session 2	
	Stage-setting talks Theme 3 <i>M. Riquelme & M.-E. Innocenti</i>		Plenary discussion: Book structure and breakout sessions <i>Chair: T. Dudok de Wit</i>	Breakout working session 3	
	17:30 reception at ISSI		19:00 Dinner at Rosengarten		

- On **Monday**: after a short introduction to the workshop, we shall have a series of stage-setting talks given by solicited speakers on each of the three main themes. These are:
 - Theme 1: What is the nature of waves and fluctuations at electron-scales in astrophysical plasmas?
 - Theme 2: How are electrons heated and accelerated in astrophysical plasmas?
 - Theme 3: What processes govern the heat conduction of electrons in astrophysical plasmas?

Stage-setting talks aim to provide an overview of the main results, key issues and open questions in electron-scale physics. Stage-setting speakers are invited to provide an overview focused on their specific area of expertise, but to avoid a discussion limited to their own research.

- From **Tuesday to Thursday**: Plenary sessions (one per theme), each consisting of a series of short contributed talks of 11 minutes each, followed by a moderator-led discussion. These talks will be short pitches focusing on a particular aspect of electron-scale physics, preferably with a single strong message.
- From **Wednesday to Friday**: A mix of plenary and breakout sessions to discuss the various papers that will be one of the tangible outcomes of this workshop. These papers will be published as book chapters in ISSI's Space Sciences Series and individually as articles in Space Science Reviews. These are not proceedings, but in-depth papers based on the contributions and discussions at the workshop.

Scope and focus: Since this meeting is meant to be a interdisciplinary workshop and not a conference for specialists, **we strongly encourage all speakers to be open and critical, highlighting gaps of knowledge, or where results disagree**. Although all participants are familiar with electron-scale physics, they come from very different backgrounds, some working on galaxy clusters, on solar wind turbulence, on fusion devices, etc. So please adapt your message to this diverse audience.

Schedule: As there are many short presentations on the agenda, we kindly ask all speakers not to exceed the allotted time. This is very important for this meeting, as we want to leave enough time for questions and answers. **The length of contributed presentations in the plenary sessions is 11 minutes + questions.**

The workshop will start on Monday at 9:00 CEST and end on Friday at 12:00 CEST. We expect 43 participants, 5 of whom will be online. The order of presentations in the plenary sessions will be added to the workshop website on Friday. The schedule is flexible: if you have any special requirements (e.g. because of scheduling conflicts), just let us know when you are at ISSI.

Presentations: All speakers are invited to give their presentation from their laptop by using zoom. There is no need to upload your presentation beforehand or to bring a usb key. The zoom link will be sent around shortly before the meeting. Online participants will be able to attend all the plenary and breakout sessions remotely by using zoom. The auditorium is fully equipped with

cameras and microphones.

Coffee breaks: Be reassured that there will be coffee breaks! However, these are not scheduled at fixed times in order not to interrupt lively discussions when unnecessary.

Welcome reception: On Monday at 17:30 everyone is invited for a reception at ISSI with drinks and snacks.

Excursion: The programme includes a visit of the [Swiss Plasma Center](#) (Lausanne), which operates a tokamak as well as several smaller plasma devices to study turbulence, etc. The bus will leave on Tuesday at 13:45 in front of the Kunstmuseum (Hodlerstrasse 8), which is located in the city centre, a 15 minutes walk from ISSI. The bus is expected to come back by 18:30.

Workshop dinner: The workshop dinner will take place on Wednesday evening at 19:00 in the Rosengarten (Alter Aargauerstalden 31b, Bern – near the bear pit), which provides a nice view over the old city. If for some reason you cannot come, please inform the ISSI secretaries (secretary@issibern.ch) immediately.

Lunch: will be taken in local restaurants nearby ISSI. There are many options. A list of suggestions will be provided (including vegetarian, vegan, gluten-free, etc.). Everyone can organise their dinner as they wish.

Accommodation: All those attending in person have a room booked in their name. If for any reason your arrival/departure dates have changed, please inform the ISSI secretaries (secretary@issibern.ch) asap so that they can warn the hotel.

Venue: All plenary sessions will be in the Johannes Geiss auditorium, which is on the 1st floor. Breakout sessions will be on the 3rd and 4th floors.

See you soon at ISSI and have a safe travel!

The conveners

Daniel Verscharen (University College London, United Kingdom)
Aurora Simionescu (SRON, the Netherlands)
Oreste Pezzi (Institute for Plasma Science and Technology, National Research Council, Italy)
Julia Stawarz (Imperial College / Northumbria University, United Kingdom)
Kris Klein (University of Arizona, USA)
Denise Perrone (Italian Space Agency, Italy)
Rumi Nakamura (IWF/OEAW, Graz, Austria & ISSI, Switzerland)
Thierry Dudok de Wit (ISSI, Switzerland & University of Orléans, France)

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