

ISSI MUSEC Agenda 24/02/25 - 28/02/25

How to get to ISSI in Bern

By train : Take the train to Bern Main Station

By plane : Fly to Zurich Airport than take a train to Bern Main Station (1h30 from Zurich to Bern)

Address :

International Space Science Institute (ISSI)

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<https://www.issibern.ch/who-we-are/visit-us/>

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Accommodations :

Our hotel is “**Hotel Kreuz**” that is booked by ISSI

Address : Zeughausgasse 41, 3011 Bern, Swiss
Phone: +41 31 329 95 95

Please notify ISSI of your arrival/departure dates by the 24.01.2025 at secretary@issibern.ch

Meals :

Breakfast is included at the hotel

A per diem of ~70 CHF is provided by ISSI for the other meals

All meeting attendees will receive a per diem claim form while at ISSI.

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Topics :

1 - Surface Weathering and Exosphere Variability

- Global geological features and link to exosphere
- Local volatile concentration/coverage
- Multi-scale sputtering approaches
- MD modelling of sputtering (quantify SBE, composition, yields vs neutrals)
- Global exosphere structure
- Key unknowns in exosphere models

2 - Key Surface Properties Relevant to Understanding the Exosphere

- SBEs (adsorbed, amorphous) & coverage
- Dynamic SBE approaches
- Reflection and energy accommodation of low energy atoms
- Sulfur at Mercury
- (Studying icy surfaces)

3 - Dynamic processes at the atomic and Granular scale

- Diffusion atomically along the surface
- Diffusion in granular packing
- Spectral surface properties
- Regolith structure / Porosity

Scientific presentations

Monday 24/02 9h30 – 13h00

9h30 – 10h00 Welcome, overview of approach, plan for the week

Surface Weathering and Exosphere Variability session

10h00 – 10h30

Sebastien/François – Exosphere-Surface interactions

10h30 – 11h00

Rozenn – PHEBUS

Coffee Break 11h00 - 11h20

11h20 – 11h50

Emma – Spectral properties and space weathering

11h50 – 12h20

Giulia – Spectral properties

12h20 – 12h50

Alexander - Exosphere

Scientific presentations & Splinters

Monday 24/02 14h30 – 17h00

Surface Weathering and Exosphere Variability session

Conor 14h30 – 15h15 :

Exosphere simulation

Coffee Break 15h15-15h30

Splinter meetings 15h30-16h45 :

- Divide the team in three (according to the topics), discuss potential collaboration and applications. Note ideas on a presentation that will be discussed on Day 4

16h45 – 17h00

Summary of the day/ discussion

Evening : Team Dinner

Scientific presentations

Tuesday 25/02 9h30 - 13h00

Key Surface Properties Relevant to Understanding the Exosphere session

9h30 - 10h00

Adam - Sputtering and Diffusion

10h00 - 10h30

Cathy - Laboratory experiments and potential comparison to MD

Coffee 10h30-10h50

10h50 - 12h30

Splinter meetings

- Divide the team in three (according to the topics), discuss potential collaboration and applications. Note ideas on a presentation that will be discussed on Day 4

Scientific presentations & Splinters

Tuesday 25/02 14h30 – 17h00

Key Surface Properties Relevant to Understanding the Exosphere session

14h30 – 15h00

Liam - Atomistic Modelling Approaches to Better Understand Surface Exosphere Connections.

15h00 - 15h30

Kai - Atomistic Modelling Approaches for space weathering

Coffee break 15h40-16h00

16h00 - 16h30

Caixia/Daniel (Zoom) : Ion Sputtering in Laboratory

16h30 – 17h00

Summary of the day / discussion

Scientific Presentations

Wednesday 26/02 9h30 – 13h00

Dynamic processes at the atomic and Granular scale

9h30 - 10h00

Anastasis – On-grain diffusion in MD

10h00 – 10h30

Menelaos – Granular packing influence on volatile release

10h30 – 11h00

Johanna – Thermal modeling of the lunar regolith

Coffee Break 11h00 – 11h20

11h20 - 11h50

Flyura – DFT simulation

11h50 – 12h20

Sébastien – Micro-meteoroid impacts using ISale

12h20 - 13h00 – General Discussions / Questions

Discussions/splinters and publication plans

Wednesday 26/02 15h00 – 17h30

15h00 – 15h45 :

Splinter group ideas presentation – Topic 1

15h45 – 16h30 :

Splinter group ideas presentation – Topic 2

16h30 – 17h30 :

Splinter group ideas presentation – Topic 3

Discussions

Evening : Team Dinner

Discussions and publication plans

Thursday 27/02 9h00 – 12h30

9h00 - 12h30 :

- General Discussions
- Publication Plans

Coffee Break 15h30 – 15h50

Summarizing the 4 days of presentations and splinter

Key actions going forward

Afternoon : Free time or optional visit to Lauterbrunnen

Specific Discussions

Friday 28/02 9h30 – 12h00

Morning :

Specific working discussions and Working time

12h00 : Meeting adjourned

Multi-scale Understanding of Surface/Exosphere Connections (MUSEC)

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