



# Geospace Coupling to Polar At- mosphere. ISSI Team Meeting Agenda

# Meeting Agenda

**Date: 8-12 November 2010**

**Title of Meeting: First team meeting**

**Location: International Space Science Institute (ISSI), Hallerstrasse 6, 3012 Bern, Switzerland  
Seminar Room, first floor**

**Attendees:**

Annika Seppälä, Mark Clilverd (British Antarctic Survey)

Eugene Rozanov (Friday), Tatiana Egorova (Tuesday), Marco Calisto (PMOD/WRC and IAC ETHZ, Switzerland)

Carl-Fredrik Enell, Antti Kero, Thomas Ulich (University of Oulu/Sodankylä Geophysical Observatory)

Pekka Verronen, Sanna-Mari Salmi (Finnish Meteorological Institute)

Daniel Marsh (National Center for Atmospheric Research)

Esa Turunen (EISCAT Scientific Association)

Craig Rodger (University of Otago)

Invited external experts:

Andreas Baumgaertner (Max Planck institute for Chemistry): Invited presentation on EPP-NO<sub>x</sub> modelling work. \* (Present Monday-Tuesday)

Corinne Straub and Klemens Hocke (University of Bern) (Attending Peter Hoffmann's ISSI team meeting for the week. We aim to arrange discussions with the whole team during the week.)

## Agenda

### Time table

<b>Monday (Start at 10 am)</b>	<b>Tuesday (Start 9:30 - 10:00)</b>	<b>Wednesday (Start 9:30 - 10:00)</b>	<b>Thursday (Start 9:30 - 10:00)</b>	<b>Friday (Start 10 am)</b>
Maurizio Falanga: Introduction to ISSI  1. Introduction (Annika) 2. Types of precipitation (Mark) 3. Models - WACCM (Dan) - SOCOLi (Marco) - FinRose (Sanna) - SIC (Pekka)  <i>Andreas presentation*</i>	5. Storm/particle precipitation effects - Trace gases - Dynamics - Troposphere links - Climate - Role of SSW - Joule heating - Global response - Mid- and low-latitudes	6. Linking precipitation observed by satellites and ground based instruments to 3D models (Craig)  7. Work on particle precipitation - Spectrum - Coupling instruments - Ionisation rates	10. Links to other ongoing and future projects - SIOS (Esa) - Other ISSI groups (Esa)  11. Future missions - EISCAT_3D (Esa) - Satellite missions - Planned instruments - Balloon campaigns: BARREL (Mark), Swedish campaigns (Esa)	8. Work on case study
4. Datasets - Satellites (Annika, Pekka) - Riometers (Thomas) - Ionosondes (Thomas) - AARDDVARK (Mark/Craig) - MF radar (Thomas) - Radiometer (Mark) - EISCAT (Esa)  17:00 ISSI welcome	8. <b>Work on case study</b> - Start planning based on morning session's discussions	9. <i>Corinne Straub and Klemens Hocke from Bern University: Stratospheric warming campaign in Sodankylä</i>  8. Work on case study	12. CHAMOS introduction and status reports (Esa and Thomas)	13. Next ISSI team meeting  <i>Summary</i>

These are presented in more detail on the following pages.

## Detailed topics to discuss during the meeting

1. Context - presentation in the beginning (Annika)
2. Types of precipitation (Mark)
  - Where. When. What are the main characteristics.
  - Can we put this information together into a reference table?
3. Models
  - SIC, WACCM, SOCOLi, FinROSE (presentations on each model: Basics, what studies have been made & results, main future development plans, strengths and weaknesses)
  - Can the models produce SSWs so we can study events such as those taking place on 2004, 2006, 2009
  - What do the models need as inputs
    - What is the particle precipitation input, ionization rate profile?
    - What other inputs are needed?
    - What parameters are used?
  - Importance of HO<sub>x</sub> to large models
    - Lessons from SIC. (Pekka)
  - Using SIC with Chemistry-Climate models
4. Datasets we have access to and what they can be used for
  - Satellites: Envisat (GOMOS, MIPAS), Aura (MLS, OMI), Odin
  - Ground based:
    - BAS Radiometer
    - EISCAT
    - Riometers
    - Ionosondes
    - AARDDVARK
    - Sodankylä MF radar
5. Storm/particle precipitation effects:
  - NO<sub>x</sub>, HO<sub>x</sub>, O<sub>3</sub>, and other trace gases in MLT and stratosphere
  - Effects on dynamics in MLT and stratosphere
  - Links to troposphere, climate variability
  - What is the role of SSWs? NO<sub>x</sub> descent events of 2004, 2006, 2009!
  - Joule heating, is it important?
  - Global response, mid- and low-latitudes and the equator region. Are these important? Do we expect to see a response in these regions if the forcing is at/near the poles? What about coupling with QBO (see paper by Lu et al.)?
6. Linking precipitation observed by satellites and ground based instruments to 3D models. Starting points?

## 7. Work on particle precipitation

- How do we get the spectrum
- How to couple instruments
- Turning precipitation observations into ionization rates

## 8. Case study to be set up:

- Look in detail into a case such as 2003-2004 NH winter when several different types of precipitation were present or
- Look into consequences of more background type of precipitation
- Which datasets do we have available for
  - Initial conditions
  - Ionization conditions
  - Comparison with model results
- How to run the models?
  - Suitable time and duration
    - Case study of a year?
    - Several years?
  - Time of year
  - How much computer time is required
- Setting up intercomparison for next meeting
  - Parameters etc.

## 9. Corinne Straub and Klemens Hocke from University of Bern will come to talk about the Stratospheric Warming campaign in Sodankylä in January 2010.

- Possible collaborations
- Radiometer work?

## 10. Links to other ongoing and future projects → Support to work done within other projects (ISSI and others)

- SIOS an ESFRI Roadmap project, and ISSI middle atmosphere team work? (Esa)
- CAWSES II ([www.cawses.org](http://www.cawses.org))

## 11. Future missions

- Satellite missions and planned instruments relevant for our work
- Balloon campaigns
  - BARREL (Balloon Array for RBSP Relativistic Electron Losses) (Mark)
  - Swedish Balloon proposals, Auroral and REP electrons (Esa)
- What recommendations would we have for future missions? (can be made a topic for the next meeting)
  - Results from our work → Which parameters should future missions be measuring
  - EISCAT\_3D

12. Introducing CHAMOS (working group around the Sodankylä Ion Chemistry model) and reporting on recent development. Linking new people to CHAMOS
13. Next ISSI team meeting
  - Timing: Year 2011
  - Topic suggestions for next meeting
    - Plan to start writing a paper on results during the meeting?
  - Experts we should invite to the meeting. Which fields? Names?
  - Students!
14. Exchange with SSW ISSI team (Peter Hoffmann: *Bridging the gap between the middle and upper atmosphere: coupling processes due to winds and waves over an extended altitude range*) who are at ISSI on the same week?

## Useful information

### Access to Public Wireless Facilities at ISSI

In order to have access to the wireless or plug-contact access points you need to own a user credentials (i.e. a combination of userid and password) issued by the IT service department of ISSI. As a registered member of an official congress, team or workshop held at the ISSI you will get a temporary account during the registration process.

**1st step:** connect to one of ISSI's wireless access points: ISSI\_Wireless01 (1st & 2nd floors) ISSI\_Wireless02 (3rd floor)

**2nd step:** Setting a Proxy in your web-browser, HTTP ONLY (necessary for all participants including Ethernet connections). Please setup your proxy before you start authenticating.

IE: Tools -> Internet Options -> Connections -> LAN Settings -> Advanced

Netscape/Mozilla: Edit -> Preferences -> Advanced -> Proxies -> Manual Proxy Configuration

Firefox 1.\*: Tools -> Options -> General -> Connection settings -> Manual Proxy Config.

Firefox 2.\*: Tools -> Options -> Advanced -> Network -> Settings -> Manual Proxy Config.

Firefox 3.\*: Same as 2 with the exception of manually accepting the certificate when authenticating

Mac users (Firefox only): instead of clicking on Tools, you should click on Firefox and then Preferences

Safari: System Preference -> Network -> Proxies -> Web Proxy

HTTP-Proxy: **proxy.unibe.ch** port **80**

No Proxy for: \*.unibe.ch; \*.issibern.ch (Internet Explorer) .unibe.ch, .issibern.ch (Mozilla / Firefox)

### 3rd step: Authentication

HTTPS: If you start up your browser, you will automatically be prompted to authenticate. Use your credentials to log in. Please keep in mind that although the authentication itself is encrypted, the subsequent traffic is NOT, i.e. you should not send passwords or other confidential data over this connection (wireless!). This is the reason why plaintext applications that require authentication (POP, IMAP, Telnet and FTP) to server inside the university campus are not permitted.

VPN clients: you should only join one of ISSI's wireless access points and then simple open the VPN connection without authenticating to our network.

#### *Possible Problems with HTTPS-Authentication*

During HTTPS authentication process you will get a window to confirm the acceptance of the server certificate. It states that the certificate is not a valid one. There is no security concern about that; just accept it and go ahead. Be aware that sometimes this smaller window is hidden behind the authentication window (especially in Internet Explorer), so when the authentication process takes a long time have a look behind the one in front. To shorten the authentication process it is good practice to install the server certificate permanently. Be aware that the authentication will time out every 4 hours if computer is inactive.

#### *Settings for eMail*

If you can not send any emails from your Email client program, then you should use our Outgoing Mailserver (SMTP) **smtp.unibe.ch** Please do use any authentication for SMTP – this does not apply to Webmail users

**If you have any problems, please contact Saliba: [saliba@issibern.ch](mailto:saliba@issibern.ch) phone: 3251**

## ISSI location and Hotel Metropole

We have been booked into

Hotel Metropole (**Green mark on the map**)

Zeughausgasse 26, 3011 Bern

Tel +41 31 311 50 21, Fax +41 31 312 11 53

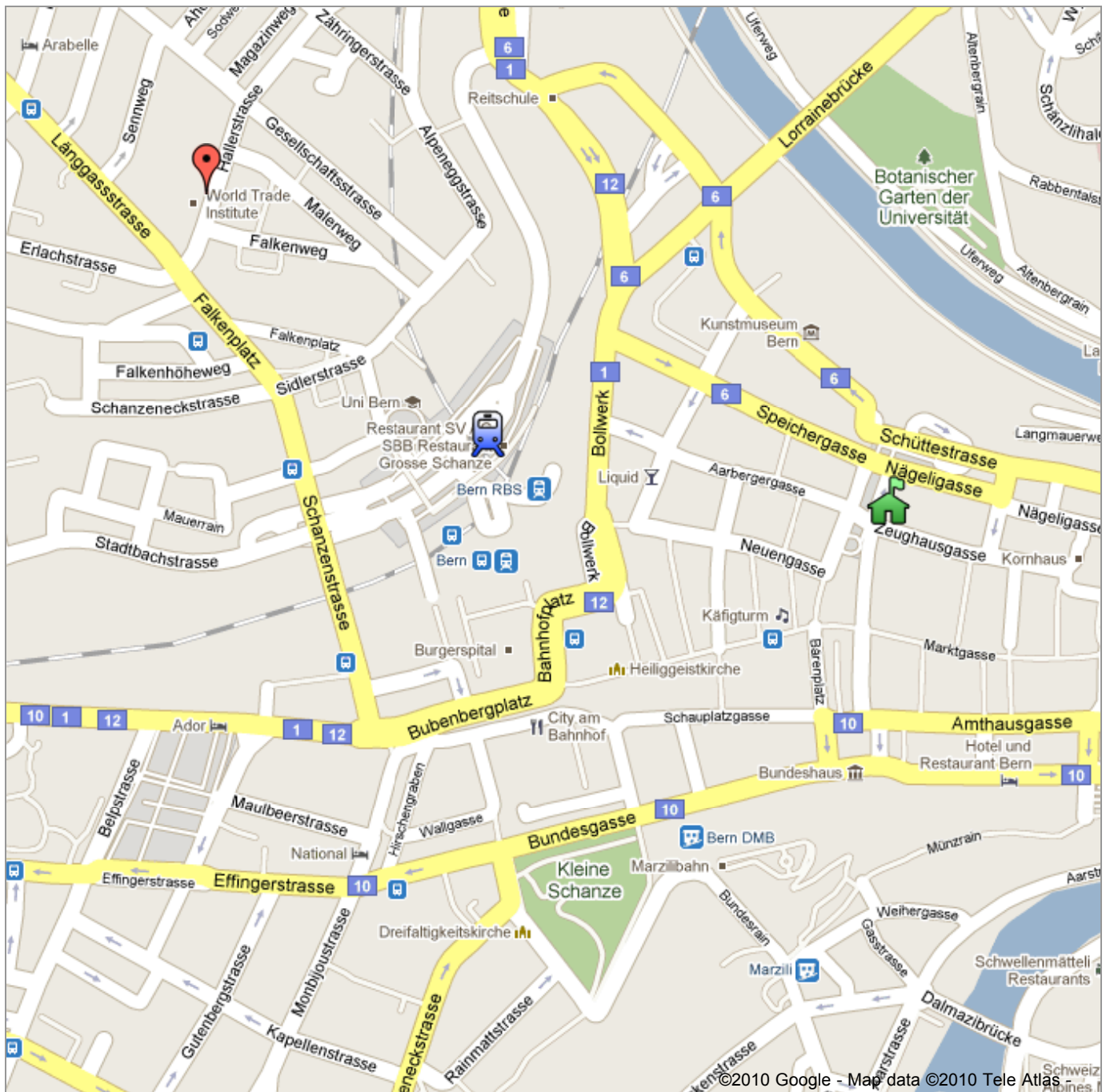
Walking distance from the main station: 6 minutes.

ISSI is located at (**Red mark on the map**)

Hallerstrasse 6, 3012 Bern

Telephone +41 31 631 48 96





### ISSI meeting

To see all the details that are visible on the screen, use the "Print" link next to the map.

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By [Annika](#)



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Hallerstrasse 6



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Zeughausgasse 26

# Meeting Summary

To be added after the meeting.