

MONDAY 10.01.2011

08:00-08:20	Registration in ISSI (Hallerstrasse 6, 1 st floor)	
08:20-08:35	Introduction to ISSI and the Workshop	R.M. Bonnet
08:35-08:50	Remarks on the scientific objectives of the workshop	L. Bengtsson

1. Earth’s energy flows

Conveners: K. Trenberth & R. Kandel

Chairman: L. Bengtsson

08:50-09:25	Understanding and measuring Earth's energy budget: from Fourier, Humboldt, and Tyndall to CERES and beyond.	R. Kandel
09:25-10:00	The flow of energy through the climate system and its replication in climate models	K. Trenberth
10:00-10:35	Variability in the top of the atmosphere radiation	N. Loeb

10:35-11:00 Coffee break

11:00-11:35	Upper ocean heat content	J. Lyman
11:35-12:10	Closing the Earth’s energy budget	K. Trenberth
12:10-12:45	Global Surface energy budget	S. Kato

12:45-14:00 Lunch

14:00-14:35	Linkages Between Energy & Water Cycles	C. Kummerow
14:35-14:50	Discussion	Rapporteur: M. Palmer

2. Aerosol forcing

Conveners: J. Heintzenberg & P. Ingmann

**Chairman:
J. Heintzenberg**

14:50-15:25	Monitoring aerosols from space: What can we say and what we can't	R. Kahn
15:25-16:00	The power of active optical techniques	C. Trepte

16:00-16:30 Coffee break

16:30-17:05	Integration of surface, in-situ observations and satellite observations	U. Baltensperger
17:05-17:40	Modelling and observations of the direct radiative forcing of tropospheric and stratospheric aerosols	J. Haywood
17:40-18:15	Do aerosols change cloud cover and affect climate?	S. Schwartz

18:15 Welcome reception

TUESDAY 11.01.2011

2. Aerosol forcing (cont.)**Conveners: J. Heintzenberg & P. Ingmann****Chairman: P. Ingmann**

09:00-09:35	Characterization of aerosols and process studies	J. Heintzenberg
09:35- 10:00	Modelling of aerosols in a GCM	H. Le Treut
10:00-10:35	Aerosol-cloud interactions	U. Lohmann

10:35-11:00 Coffee break

11:00-11:35	Integration of models and observations of cloud-aerosol interactions	R. Wood
11:35-12:10	Greenhouse warming - solar brightening and climate sensitivity in and around the Alps	R. Philipona
12:10-12:30	Discussion	Rapporteur: F. Bender

*12:30-14:00 Lunch***3. Solar forcing during the last century****Conveners: C. Fröhlich & R. M. Bonnet****Chairman: C. Fröhlich**

14:00-14:35	Solar influence on the Earth climate	M. Lockwood
14:35-15:10	Observations of total solar irradiances	C. Fröhlich
15:10-15:45	Observations of spectral solar irradiances	P. Pilewskie

15:45-16:15 Coffee break

16:15-16:50	Reconstructions of solar irradiances	Y. C. Unruh
16:50-17:25	Solar irradiance variability in the Earth’s atmosphere	E. Rozanov
17:25-18:00	Discussion	Rapporteur: K. de Jager

WENDESDAY 12.01.2011

4. The role of water vapour**Conveners: J. Harries & R. Allan****Chairman: R. Allan**

08:30-09:05	Improving our understanding of the water vapour continuum	K. Shine
09:05-09:40	Water vapour feedback	B. Soden
09:40-10:15	Water vapour variability in the free troposphere	R. Roca

<i>10:15-10:45 Coffee break</i>

10:45-11:20	More observational evidences of supporting the strengthened Walker Circulation over recent three decades	B. J. Sohn
11:20-11:55	Sensitivity of hydrological cycle	P. O’Gorman
11:55-12:25	Discussion	Rapporteur: A. Dessler

5. The role of clouds**Conveners: N. Loeb & B. Soden****Chairman: N. Loeb**

12:25-13:00	Low-cloud contributions to, and regulation, of planetary albedo	B. Stevens
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<i>15:00-17:00 Guided tour at the Einstein Museum</i>

<i>19:00 Workshop dinner: Restaurant zum Äusseren Stand</i>

THURSDAY 13.01.2011

5. The role of clouds (cont.)

Conveners: N. Loeb & B. Soden

Chairman: N. Loeb

09:00-09:35	Observational Constraints on Cloud Feedback	B. Wielicki
09:35- 10:10	Observing Cloud Processes	G. Stephens
10:10-10:45	Lower cloud feedbacks	A. Clement
<i>10:45-11:15 Coffee break</i>		
11:15-11:50	The Clouds of the Middle Troposphere: More Than Meets the Eye?	K. Sassen
11:50-12:25	High cloud radiative processes	D. Hartmann
<i>12:25-14:30 Lunch</i>		
14:30-15:05	Cloud adjustment and its role in radiative forcing and climate sensitivity	T. Andrews
15:05-15:40	Representing the sensitivity of convective cloud systems to tropospheric humidity in GCMs	A. Del Genio
15:40-16:15	Cloud diagnostics in GCMs	H. Barker
<i>16:15-16:45 Coffee break</i>		
16:45-17:20	The changes in clouds and Earth’s energy flows in a 230-year simulation with high resolution AGCM.	M. Sugi
17:20-18:00	Discussion	Rapporteur: P. Taylor

FRIDAY 14.01.2011

6. Summary of rapporteurs**Chairman: B. Soden**

09:00-09:30	Rapporteur Session 1	M. Palmer
09:30-10:00	Rapporteur Session 2	F. Bender
10:00-10:30	Rapporteur Session 3	K. de Jager
10:30-11:00	Rapporteur Session 4	A. Dessler

11:00-11:30 Coffee break

11:30-12:00	Rapporteur Session 5	P. Taylor
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7. General summary

12:00-12:10	Meeting summary	L. Bengtsson
12:10-12:45	Relating climate forcings and climate response	S. Schwartz
12:45-13:00	Discussion	

*13:00-14:30 Lunch***8. Meeting of the conveners**

14:30-17:00	Discussion	
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POSTER PRESENTATIONS

- Reconstruction of TSI for Cycle 23 using the SATIRE-S model (W. Ball).
- Examination of the Earth’s Radiation balance using satellite observations and modelling data (S. Koumoutsaris, L. Bengtsson, L. Pozzoli).
- Comparison of ambient aerosol extinction coefficients obtained from in-situ, MAX-DOAS and LIDAR measurements at Cabauw (P. Zieger).