



IRS Business Meeting 2013

8-9 July, Davos, Switzerland

Minutes (Decisions, Actions & Slides)

Decisions and Action (Summary)



Decision 1 (page 6):

The tributes will be available on the webpage and all commissioners are requested to propose remembrances of other IRC scientists who recently passed away.

Decision 2 (page 7-8):

The Treasurer's Report is approved by all commissioners

Decision 3 (page 10):

100 hardcopies (book) of the proceedings will be printed for 70 USD each (paid with remaining IRS2012 budget) and the books will be distributed to selected persons (IRC members, IRS2012-session conveners, libraries)

Decision 4 (page 27):

The next IRC BM will take place on a day during the COSPAR Assembly **August 2-10 2014** in Moscow, Russia

Decision 5 (page 28):

Proposals to organize IRS2016 are welcome from now on over the next 11 month.

Decision 6 (page 70): :

IRC writes an additional statement, endorsing the statements of ICCP and IAMAS.

(Voting: 11=action; 1=no action; 2= abstentions)

Decisions and Action (Summary)



Decision 7 (page 70): :

Creating IRC writing commission:

Chair: B.J. Sohn; Members: B. Cahalan, C. Stubenrauch, W.Schmutz and Peter Pilewskie.

The writing commission will prepare a first draft and then send this draft to all commissioners and requests for comments.

Action 1 (page 9):

The webpage will be hosted at PMOD/WRC. Luca will coordinate the transfer between Bob Cahalan's IT specialists and PMOD IT responsables. Upcoming events can and should be advertised with the IRS webpage.

Action 2 (page 10):

Bob Cahalan will take care for the printing and distribution of the printed books to selected persons (IRC members, IRS2012-session conveners, libraries)

Action 3 (page 28):

Proposals for the IRS2016 should be sent to IRC from now on over the next 11 month.

Action 4 (page 30):

Peter Pilewskie will contact the Chairs of WG with missing reports.

Action 5 (page 71):

Luca will compile the minutes including the presented slides.

Attendance List



Attending Commissioners (with short personal Introduction)



IRC - BM 2013

Attendance List: 1st Day

JULIAN GRÖBNER	Juli Gröbner
MARIO BLUMTHALER	Mario Blumthaler
ALKIS BAIS	Alkis Bais
Manfred Wendisch	Manfred Wendisch
Manuel LÓPEZ-PUERTAS	Manuel López Puertas
Victoria Cachorro	Victoria Cachorro
Tatiana ZHURAVIEVA	Tatiana Zhuravieva
Hua Zhang	Hua Zhang
LI ZHENGQIANG	Li Zhengqiang
Claudia Stubenrauch	Claudia Stubenrauch
Jürgen Fischer	Jürgen Fischer
Peter PILEWSKII	Peter Pilewski
ROBERT CAHALAN	Robert Cahalan
B.J. SOHN	B.J. Sohn



IRC - Business Meeting 2013

Dacas

Attendance list 2nd -day:

Luca Egli	Luca Egli
Jürgen Fischer	Jürgen Fischer
Alkis Bais	Alkis Bais
MARIO BLUMTHALER	Mario Blumthaler
JULIAN GRÖBNER	Juli Gröbner
Manfred Wendisch	Manfred Wendisch
Claudia Stubenrauch	Claudia Stubenrauch
Robert Cahalan	Robert Cahalan
Hua Zhang	Hua Zhang
Tatiana Zhuravieva	Tatiana Zhuravieva
ZHENGQIANG LI	Li Zhengqiang
B.G. SOHN	B.J. Sohn
Hajime Okamoto	Hajime Okamoto
VICTORIA CACHORRO	Victoria Cachorro
Manuel López Puertas	Manuel López Puertas



Welcome - New Commissioners



Werner Schmutz :

- Alexander Trishchenko Canada
- Zhengqiang Li China
- Manfred Wendisch Germany
- Alkiviadis Bais Greece
- Alcide Georgio di Sarra Italy
- Yasuko Kasai Japan
- Hajime Okamoto Japan
- Roger Davies New Zealand
- Tatiana Zhuravleva Russian Fed
- Manuel López Puertas Spain
- Robin Hogan UK
- Ping Yang USA
- David Tobin USA

President's Report



In Remembrance:



Sean Twomey

1927 - 2012

Tribute by Peter Pilewski



Ellsworth Dutton

1949 – 2012

Tribute by Peter Pilewski and Bob Cahalan



Hans-Jürgen Bolle

1929 – 2013

Tribute by Jürgen Fischer

The written tributes will be available on the webpage

President's Report



Treasurer's Report: *B.J. Sohn*

IRC Fund Accounts since 2009					
IRC Fund Dollar Account					
Date	Descriptions	Income	Spending	Balance	Remarks
2009. 2	Transfer from U. Tokyo	\$17,245.90		\$17,245.90	
2009. 9	Conversion to KRW (for transfer fee etc)		\$500.00	\$16,745.90	Converted into KRW, and deposited in a separate account
2009.9.16	From IRS2008	10,237.39		\$26,983.29	
2009. 9	IRC BM expenses (Montreal)		\$744.81	\$26,238.48	To Carol, NASA Federal Credit Union
2010. 1	BAMS article publication fee		\$1,250.00	\$24,988.48	To Hans Volkert, Dresdner Bank
2011.7.29	IRC BM expenses (Melbourne)		\$700.00	\$24,288.48	Melbounre BM catering (AUS\$ 503.40)
2012. 4. 23	From IAMAS	1991.26		\$26,279.74	Travel supports for IRS2012
2012. 6. 12	IRC Gold Medal payment		\$4,000.00	\$22,279.74	Lent to Marcia Yamasoe
2012. 7. 9	Returned payment for Gold medal	3954		\$26,233.74	returned from the manufacturing company because the company should not receive the money from outside
2012. 7. 24	Travel supports for IRS2012		\$7,000.00	\$19,233.74	Sent to LOC
2012. 7. 24	Interest	41.64		\$19,275.38	
2012. 9. 27	Young Scientist prize		\$1,000.00	\$18,275.38	To Rob Levy
2012. 12	Publication fee for IRS'12		\$4,000.00	\$14,275.38	will be paid to AIP
	Fee to send money to IAP		\$24.20	\$14,251.18	IRS2012 Proceedings
	Interest	47.56		\$14,298.74	
2013. 3. 9			\$43.74	\$14,255.00	
			\$14,255.00		to Peter Pilewskie
Total		\$33,517.75	\$33,517.75	\$0.00	

President's Report



Web Site:

The screenshot shows the website www.irc-iamas.org in a Mozilla Firefox browser. The page header includes the IAMAS IRC logo and the text "International Radiation Commission" with the tagline "Research into Atmospheric Radiation". A navigation menu contains links for Home, Organization, Working Groups, Symposium, Resources, and Awards.

The main content area features a "News and Updates" section, which is circled in red. A red arrow points from the text "Advertising Events" to this section. The news items listed are:

- ▶ ISARD 2013
- ▶ IRS2012 Proceedings Now Published Online!
- ▶ Photos from the IRS 2012 in Berlin
- ▶ Upcoming Radiation Meetings and Events
- ▶ 2012-2016 IRC Officers Elected at Business Meeting

Below the news items are buttons for "Tributes" and "Photo Gallery". To the right of the news section is a large photograph of a group of people, with a caption: "IRS2012 attendees, at Dahlem Cube in Berlin, August 2012. View is from atop cube, looking down on courtyard."

Below the photo is a paragraph of text: "IRC is a global network of scientists engaged in research of atmospheric radiation and related disciplines. Founded in 1896, IRC is the oldest of the ten commissions of IAMAS (International Association of Meteorology and Atmospheric Sciences) and is currently comprised of experts from 18 countries working in universities, research institutions, government agencies and private industry. The Commission coordinates research, guides priorities, and supports international cooperation and collaboration. IRC also organizes scientific symposia open to all scientists that provide forums for the scientific community to present, discuss and promote the latest achievements in atmospheric radiation science."

The footer of the page includes the text "Last Updated: May 28, 2013" and "Webmaster: Paul Przyborski". There is also a login form with fields for "Username" (containing "luca") and "Password", and a "Log in" button. A link for "Forgot your password?" is also present. The IAMAS logo is located in the bottom right corner of the footer.

Advertising
Events

President's Report



Recent IRC Activities:

- Recommendations:

Werner Schmutz: Letter of support also for commissioners, who have difficulties for travel permission

- Meetings: DACA13

- Publications:

Bob Cahalan (see slides: XX-YY) : IRS2012 proceedings as peer reviewed papers published.

Decision:

100 hardcopies (book) of the proceedings will be printed for 70 USD each and paid with remaining IRS2012 budget.

Action:

Bob Cahalan will take care for the printing and distribution of the printed books to selected persons (IRC members, IRS session convenors, libraries)

Summary of IRS 2012 – Bob Cahalan



Bob Cahalan:



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AIP | Conference Proceedings

Volume/Page Keyword C
Volume: Page/Article:

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RADIATION PROCESSES IN THE ATMOSPHERE AND OCEAN (IRS2012): Proceedings of the International Radiation Symposium (IRC/IAMAS) [Search Volume](#) | [RSS](#) | [View Volume Detail](#)

Date: 6–10 August 2012
Location: Dahlem Cube, Free University, Berlin
ISBN: 978-0-7354-1155-5
Editor(s): Robert F. Cahalan, Jürgen Fischer

[FRONT MATTER \(PDF\)](#)
[BACK MATTER \(PDF\)](#)

Page 1 of 10 Pages [Next Page](#) | [Jump to Page](#) 1

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Preface: Radiation Processes in the Atmosphere and Ocean
FREE
Robert F. Cahalan
AIP Conf. Proc. 1531, pp. 1-5; doi:<http://dx.doi.org/10.1063/1.4804695> (5 pages)
Full Text: [Download PDF](#)
Abstract Unavailable
+ Show PACS

PLENARY SESSION [RSS](#) [TOP](#)

UNION - HISTORICAL PERSPECTIVES AND CURRENT TOPICS IN RADIATION PROCESSES IN THE ATMOSPHERE AND OCEAN [TOP](#)
Conveners: R. F. Cahalan, W. Schmutz, B. J. Sohn and J. Fischer

Summary of IRS 2012 – *Bob Cahalan*



IRS 2012 – Proceedings

IRS2012 Proceedings are now online, available free, in perpetuity

- Authors submitted papers directly to their respective Session Conveners
- All papers were reviewed by conveners, as stated on the Volume.
- URL:

<http://proceedings.aip.org/resource/2/apcpcs/1531/1?isAuthorized=no>

IRC could choose to order 100 hardcopies

- AIP contract with Springer for printing recently expired
- AIP is negotiating a new contract that would enable “print on demand”
- With “print on demand” even single copies could be printed
- Meanwhile, AIP has estimated what it would cost IRC to order 100 copies
- 100 hardcover copies sent to a single address would cost approx. \$7000.

Summary of IRS 2012 – *Bob Cahalan*



AIP email estimate

AIPCP Acquisitions Office
4:03 PM July 3, 2013
to me, Carol

Dear Robert,

Thank you for your e-mail. Based on our current pricing model for bulk print orders, the approximate price for a single bulk run of 100 hardcover print books, each of circa 950 pages, with shipping to a single address within the United States would be circa \$70 per copy. We would like to advise you that unit costs for books produced using print on demand technology (POD) may be very different to these costs --- simply because POD has a different technology/cost profile, compared to conventional printing. At present we are discussing this service with our chosen vendors/printers but are not, as yet, in a position to give accurate prices for that service.

Please let me know if I can be of further assistance.

Warm regards,

Lacie Clark
Acquisitions Office
Conference Proceedings
AIP Publishing LLC



Summary of IRS 2012 – Bob Cahalan



Is our AIP Volume number 1531 Fortuitous?

In 1531 a comet appeared, and was seen by a "Peter Apian" whose real family name was a long German name beginning with the letter "B" so he renamed himself after the Latin for "bee" – yes, the buzzing kind -- Apian, as in "apiary"! ;-) The next sighting of this comet was by Kepler, in 1607, and then 75+ years later, by Halley, in 1682. Halley used the 1531, 1607, and 1682 sightings, along with a touch of Newton's laws, to predict the next sighting would be 75 years later, in 1759. He also tried to estimate the "delay" in the next visit, caused by drag from Jupiter and Saturn, but underestimated that a bit. So the famous Comet arrived only on Christmas Day, Dec 25, 1759. Unfortunately, Halley had died in 1742, 17 years too early to reach his full fame. Even in the mid 1600's, Edmond was quite familiar with Newton's Laws. In fact it was Halley who in 1684 conceived the idea to derive Kepler's 3 laws from the Newton's law of gravity (you know, Newton's constant $\times m_1 \times m_2 / (\text{separation distance squared})$) but before working that problem, Edmond visited Isaac to tell him excitedly this idea, and (yawning, I imagine) Isaac pulled out an old notebook, saying "Oh, yes, I did that computation quite some years ago. Ellipses, Equal Areas, all that sort of thing, eh what, Edmond, old chap?" Disgusted, Ed said "Isaac, why the ___ have you never published this important work?!#__\$%" Isaac, yawning again, "Ah, well what use would that be, no one understands calculus anyway, dear chap!" So Edmond retorted, "GIVE me those notebooks, you brilliant bounder, and I'll publish them under your name, at my own expense!" So Isaac said "Sure, Ed! Here! Knock yourself out!" And so in 1687, 5 years after that conversation, which I have quoted above verbatim from my own imagination ;-) appeared the famous book *Philosophiæ Naturalis Principia Mathematica*, or as we familiarly call it today, *Mathematica*, er, ah, no, ... *Principia!*

Summary of IRS 2012



Jürgen Fischer (slides 16-26):

Remark: The financial report of IRS 2012 is completed with additional expenses from IRC (slides 21 & 22).

International Radiation Symposium

IRS 2012

Proposal for Berlin, Germany





www.irs2012.org



www.irc-iamas.org

The Second Circular for
The International Radiation Symposium (IRS2012):
Current Problems in Atmospheric Radiation

06-10 August 2012
Dahlem Cube Science and Conference Center
Berlin, Germany
www.irs2012.org

Conference venue – The Dahlem Cube



Seminaris – conference hall

- Located in Berlin-Dahlem
- Designed by Helmut Jahn (2009)
- High functionality and flexibility because of a unique attractive architecture
- Possibility to accommodate about 500 Persons
- Large space for all kinds of events with the latest information and communication technology
- Date: 6. August 2012 to 10. August 2012



Conference organization

- Professional organizer
- FU WeW Berlin
- IfT Leipzig
- IMK-ASF Karlsruhe
- DWD-MOL Lindenberg



Cost of registration (estimate based on 2010 prices)

- Regular fee: 320 EUR – 360 EUR
- Students: 120 EUR – 160 EUR
- Accompanying person: 80 EUR

The conference fee depends on the date of registration (early or late registration). Students have to certify their status from his / her thesis supervisor or with a copy of the student card. Coffee and lunch buffet is included.

- Welcome reception on Monday evening
- Conference material
- Coffee break and lunch buffet at the conference
- Conference dinner on Thursday evening
- One copy of the conference proceedings as CD-ROM

IRS 2012 - Participants



Germany	128	New Zealand	6
United States	119	Greece	4
Japan	40	Poland	4
France	25	Canada	3
Russian Federation	25	Ireland	3
Korea, Republic Of	23	Sweden	3
Netherlands	18	Australia	2
Spain	18	Czech Republic	2
United Kingdom	18	India	2
China	13	Israel	2
Finland	13	Portugal	2
Switzerland	12	South Africa	2
Austria	9	Thailand	2
Belgium	9	Argentina	1
Italy	9	Belarus	1
Brazil	7	China-Taipei	1
Norway	7	Total	533



IRS

International 2012

Radiation

Symposium

IRS2012 Daily Science Highlights
Wednesday, 8 August

The next meeting of the IRC community:
Common meeting of IAMAS and IACS July 8-12, 2013 in Davos

DACA-13

Davos Atmosphere and Cryosphere Assembly 2013
Air, Ice & Process Interactions
An IUGG (IAMAS & IACS) Event

July 8-12, 2013

Program Organization News Registration Location Contact Exhibition

Davos Atmosphere and Cryosphere Assembly 2013
Come!



Business Meeting 2014



2014 IRC Business Meeting selection (*Werner Schmutz*) :

- **Proposals from one non attending commissioner:**
 - 1) AMS Conference, Boston, USA, July 14-18 2014
 - 2) COSPAR Assembly, Moscow, Russia, August 2- 10 2014.

- **No other Proposals by attending commissioners:**

Decision:

The next IRC BM will take place on **August 2- 10 2014** at COSPAR Assembly, Moscow, Russia

Voting: COSPAR = 6, AMS=5, abstentions: 3 ; Total= 14.

Call for 2016 IRS Proposal



International Radiation Symposium (*Werner Schmutz*) :

Rules:

- Everybody is welcome to send in proposals to organize the meeting
- A small profit (5000 – 10'000 US\$) should be achieved for the IRC

Procedure:

- Proposals accepted from now on over the next 11 month
- As reference, former proposals are available from the webpage (contact the officers for support)
- Non attending commissioners and colleagues should be informed about the opportunity of proposal submission
- Formal proposals will be presented at 2014 BM in Moscow. Present commissioners will vote.

Working Group Status



Changing status of Working Groups (*Werner Schmutz*)

- Creating new WGs
- Canceling WGs

Werner Schmutz: We should determine at all next IRC BM if we want to change the status of WG.
Now: no status will be changed.

All commissioners agreed.

Julian Gröbner: What is the procedure if a new member will join to a WG:

Bob Cahalan: A member of the WG must not necessarily be a IRC member. The change of the WG (including new person) will be discussed and determined at the next BM2014.

Werner Schmutz: Idea that WG reports should be presented at IUGG 2015 in a dedicated session.
This idea will be further discussed at the next BM2014.

Working Group/Rapporteur/Visitors Report



Presented by Peter Pilewskie (see slides XX-YY) for non attending commissioners:

- a) ASA: Laurence Rothman
- b) BSRN: Gert Koenig-Langlo
- c) CR: Stefan Kinne
- d) CIRC: Lazaros Oreopoulos & Eli Mlawer
- e) GRP: Chris Kummerow (**Presented by Claudia Stubenrauch on behalf of C. Kummerow**)
- f) GEB: Martin Wild & Norman Loeb
- g) ICLAS: Upendra Singh
- h) IPRT: Bernhard Mayer & Claudia Emde
- i) ITWG: Mitch Goldberg & Niels Bormann
- j) 3DRT: Alexander Marshak & Jean-Luc Widlowski
- k) UV: Mario Blumthaler & Julian Groebner (**Presented by Julian Gröbner**)

2 WG reports and presentations missing:

ASA & ICLAS

Action:

Peter Pilewskie will contact the Chairs of WG with missing reports

2013 IRC Working Group Reports

1. BSRN (Baseline Surface Radiation Network); Gert König-Langlo; Michalsky new chair
2. CR (Clouds and Radiation); Stefan Kinne, Rapporteur
3. GEB (Global Energy Balance); Martin Wild and Norman Loeb (WG Co-chairs)
4. ITWG (International TOVS [Advanced TIROS (Television and Infrared Observational Satellite) Operational Vertical Sounder]) Working Group); Niels Bormann
5. **UV (Solar UltraViolet Radiation); Co-Chairs: Julian Gröbner and Mario Blumthaler**
6. Continuous Intercomparison of Radiation Codes (CIRC)
7. Three-Dimensional Radiative Transfer (3DRT)
8. International Polarized Radiative Transfer (IPRT)

3 Additional IRC Working Groups

1. Atmospheric Spectroscopy Applications (ASA)
2. GEWEX Data Assessment Panel (GDAP)
3. International Coordination group for Laser Atmospheric Studies (ICLAS)

Global Energy Balance (GEB)

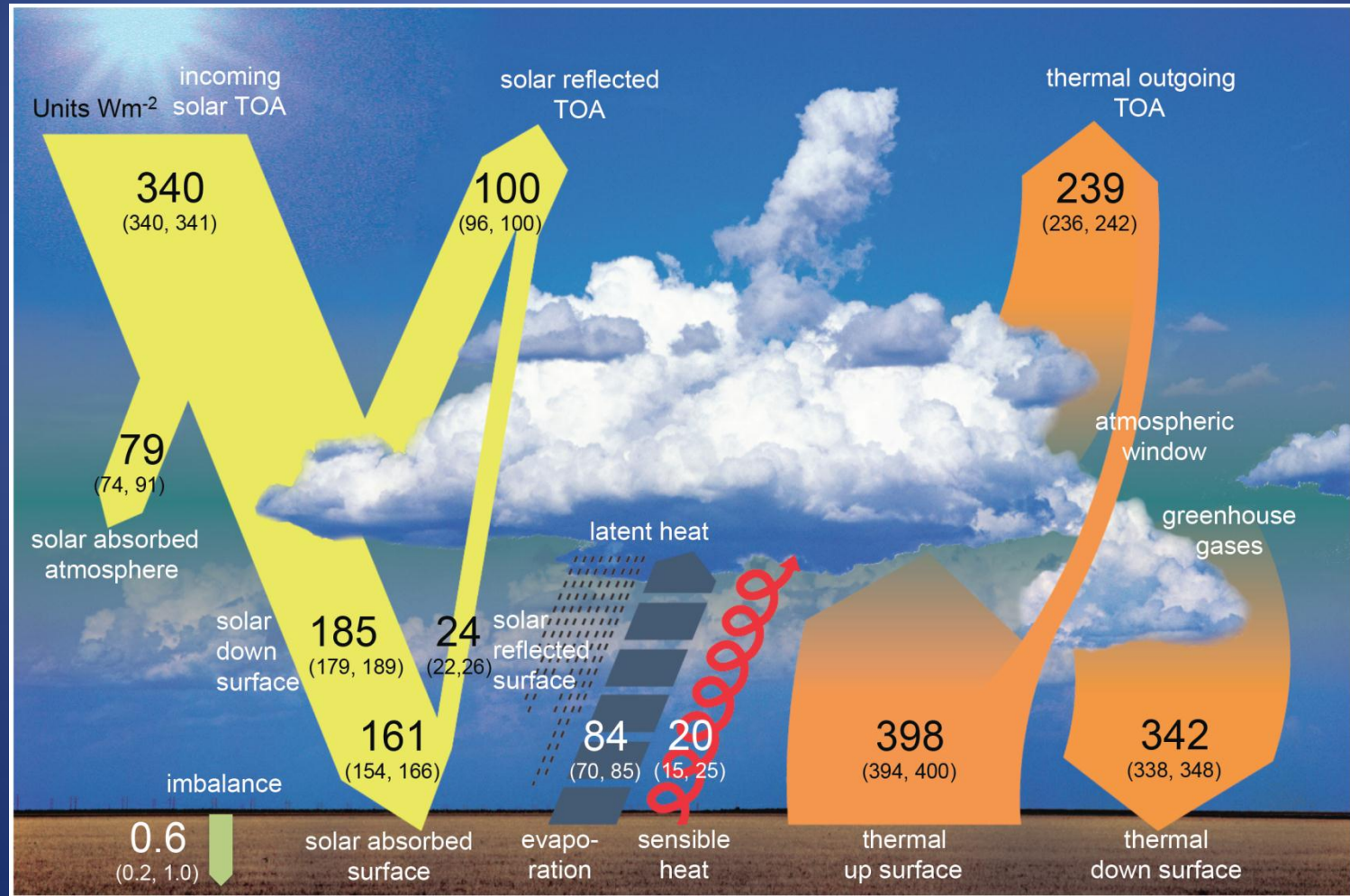
Co-chairs, Martin Wild and Norman Loeb

Current Activities

- Involvement 5th IPCC assessment report.
 - Wild is a lead author of Chapter 2, Observations: Atmosphere and Surface
 - Loeb is contributing author for the part on the changes in the Top of Atmosphere Radiation Budget.
- Co-chairs organized the IRS session *Radiation Budget & Forcing*
- EGU session *Earth radiation budget, radiative forcing and climate change*.
- May 2013, at ETH Zurich, continued the project *Towards an improved understanding of the Global Energy Balance: absorption of solar radiation*

Results

New global energy balance [*Wild et al., 2013*].



Recommendations

International community endorsements

- Next generation of ERB instruments should:
 - include onboard calibration capabilities
 - provide sufficient time for ground calibration
 - re-verify the traceability of ground calibration targets.
 - collaborate with other international standard labs
- Provide guidance on the creation of Earth Radiation Budget climate data records.

Recommendations

Surface/atmospheric radiation budget

- IRC help to raise the recognition of the importance of BSRN anchor sites.
- Global Energy Balance in IPCC report needs revision
- Continued and expanded operation and maintenance of a well calibrated network of long term surface radiation stations

Clouds and Radiation (CR)

Rapporteur, Stefan Kinne

Report Summary

- Consistent deviations appear between satellite observations and model simulated TOA radiative fluxes.
 - regional differences attributed to a poor representation of cloud radiative properties in modeling.
- The representation of clouds is generally poorer over oceans than over continents.
- Important differences in net-flux imbalance at the surface , mainly driven by cloud effects over oceans.
- GDAP (GEWEX) panel is preparing a global closure study with the best available satellite data for the year 2007.

Baseline Surface Radiation Network (BSRN)

Gert König-Langlo, Rapporteur

BSRN Report Summary

- BSRN is a GEWEX Radiation Panel project aimed at detecting important changes in the Earth's surface radiation budget.
- BSRN is designated as the global surface radiation network for the Global Climate Observing System (GCOS) and contributes to the Global Atmospheric Watch (GAW).
- Joseph Michalsky, NOAA/ESRL has kindly volunteered to be the new interim chair for BSRN.
- 58 stations are providing data to the World Radiation Monitoring
- The 12th meeting of BSRN was held 1-3 August 2012 at the Alfred Wegener Institute (AWI) Research Unit in Potsdam, Germany. (<http://www.gewex.org/bsrn.html>)

Research Results

Data from the BSRN are used in many publications to:

- Monitor the background short-wave and long-wave radiative components and their changes with the best methods currently available.
- Provide data for the validation and evaluation of satellite-based estimates of the surface radiative fluxes and
- Produce high-quality observational data for comparison with GCMs
- Archive is used in solar energy research.
- A list of publications based on BSRN data can be found at <http://www.bsrn.awi.de/en/other/publications/>.

Three-Dimensional Radiative Transfer (3D RT)

Alexander Marshak & Jean-Luc Widlowski,
Co-chairs

Objectives

- Comparing methods available for 3D atmospheric RT calculations
- Providing benchmark results for testing 3D RT codes
- Publishing an open source toolkit (community 3D MC code)
- Providing resources related to I3RC and 3D RT (codes, models, workshops, publications)

Activities

What's now available:

- Online 3D calculator
- A new image archive about 3D radiative processes
- Consensus results of I3RC intercomparison for model verification
- Publicly available codes on 3D radiative transfer
- Expanded publication list on website: over 400 publications in the I3RC publication database

Plans

- Creating an educational web pages on 3D RT;
- Adding polarization to the I3RC community code.
- Adding Rayleigh scattering to the I3RC community code.
- Adding aerosols to the I3RC community code.

International Polarized Radiative Transfer (IPRT)

Claudia Emde and Bernhard Mayer,
Co-chairs

Goals

- Compare and improve polarized radiative transfer models
- Provide benchmark results
- Develop publically available codes
- Provide information about free codes
- Provide input data (scattering matrices, BPDFs)
- Bring community together (workshops, . . .)

New tools and codes on website

(www.meteo.physik.uni-muenchen.de/~iprt/)

- ANAPOL: A tool provide by F.-M. Breon for POLDER and PARASOL data visualization and analysis
- Ray-Tracing codes by A. Macke to compute scattering matrices by aspherical partices with large size parameters
- T-matrix codes by M. Mishchenko to compute scattering matrices by aspherical particles with moderate size parameters

Model Intercomparison Studies

- Comprehensive SCIATRAN and MYSTIC intercomparison.
- A 3D model intercomparison study planned
 - three groups are involved.
 - start with very simple cases including “chess-board” clouds.
- The intercomparison of the radiative transfer codes used for GOSAT retrievals is ongoing, unfortunately not much progress has been made within the last year.
 - Groups do not use the same surface reflection matrices.
- A graduate workshop on polarization, February 2014, in Leipzig, organized by IPRT working group member A. Macke.



International TOVS Working Group activities

Niels Bormann, Mitch Goldberg,
Stephen English, Allen Huang

ITSC-18

18th International TOVS Study Conference

- Hosted by Météo France in Toulouse, 21-27 March 2012
- Attended by 154 participants from 20 countries
- 50 oral, 100 poster presentations, key topics:
 - Data from S-NPP: ATMS, CrIS
 - Data compression, PCA, apodisation for hyperspectral IR sounders
 - Use of cloud-affected radiances in NWP
 - Surface emissivity estimation and use of surface-sensitive radiances over land
- Working groups on:
 - Radiative transfer
 - Climate
 - Data assimilation and NWP
 - Advanced Sounders
 - International Issues and Future Systems
 - Products Software

ITSC-18: Key recommendations

- To IRC, CGMS and Satellite Agencies: Support for **line-by-line (LBL) reference model development** is of paramount importance and should be continued to ensure that users (in both operational and non-operational institutions) have access to the latest updates in LBL forward modelling.
 - Concern that active developments in this area have been limited in recent years.
- Encourage **validation and intercomparison of LBL models/spectroscopy** to assess the impact of spectroscopic uncertainties and the differences between line-by-line models.
- To NWP centres: Contemplate the possibility of an **intercomparison study for cloudy radiance models**.
- To CGMS and space agencies: Conduct studies to **trade-off benefits of spectral, radiometric, and spatial resolutions of infra-red sounders** and to pursue the development of next generation sounders.
- Full working group report at:
http://cimss.ssec.wisc.edu/itwg/itsc/itsc18/WGR_v1.pdf

Other Developments

- Mitch Goldberg (NOAA) and Niels Bormann (ECMWF) have been elected as new co-chairs, to organise the next 3 International TOVS Study Conferences.
- Huge thank you to outgoing co-chairs Stephen English and Allen Huang.
- Relationship with Coordination Group for Meteorological Satellites (CGMS):
 - ITWG is one of four International Science WGs that report to CGMS (TOVS, RO, precipitation and winds).
 - However, unlike the other three, ITWG had no formal link to CGMS.
 - In close discussion with IRC ITWG has become a formal sub-group of CGMS last year whilst remaining a sub-group of IRC.

ITSC-19

- To be hosted by KMA on Jeju Island, South Korea
- 26 March – 1 April 2014
- First circular:
http://cimss.ssec.wisc.edu/itwg/itsc/itsc19/ITSC_19_First_Circular.pdf



The Continual Intercomparison of Radiation Codes (CIRC)

Status report to IRC, July 2013

Lazaros Oreopoulos¹ and Eli Mlawer²

¹NASA-GSFC, Greenbelt, MD, USA (Chair)

²AER, Lexington, MA, USA (co-Chair)

What CIRC is about

- RT model intercomparison to serve as the standard for documenting the performance of RT codes used in GCMs
- Working group within IRC and GEWEX's GASS (ex-GCSS)
- Goal is to have RT codes of GCMs (incl. IPCC) report performance against CIRC
- Website: <http://circ.gsfc.nasa.gov>
- Two papers, BAMS 2010 and JGR 2012.

How CIRC differs from previous intercomparisons:

- Observation-tested (LW) LBL calculations are used as radiative benchmarks
- Benchmark results are publicly available
- Observationally-based input (chiefly from an ARM product named BBHRP)
- Intended to have flexible structure and be continual (i.e. updated periodically)

CIRC status report – activities since IRC Berlin BM

- CIRC now integrated into GEWEX's GASS (ex-GCSS) structure; Oreopoulos is member of GASS Science Steering Committee
- CIRC plenary presentation at Pan-GASS meeting September 2012, Boulder, CO
- All CIRC Phase I participants consented on having their submissions posted on CIRC website (not yet completed)
- CIRC served as main validation source for UMD's CAR "Ensemble Modeling System" (<http://car.umd.edu>)
- CIRC section for upcoming ARM book (in chapter on "Radiative Transfer Improvements in GCMs") has been drafted
- Discussions underway on possible CIRC involvement in a "structured comparison of radiation codes in CMIP/CFMIP GCMs" as part of CMIP6
- CIRC remains unfunded

GEWEX Data and Assessments Panel (former Radiation Panel) report by Chris Kummerow (Chair)

1. GDAP meeting 1-3 Oct 2012 (hosted by LMD in Paris)

Summary of meeting in GEWEX news

(<http://www.gewex.org/gewexnews/Feb2013.pdf>)

Integrated GEWEX product:

GEWEX data sets (common grid, auxiliary data) of global energy & water variables to get budget closure; first focus on 2007, to be released soon

Assessments:

Radiative Flux Assessment & Cloud Assessment finished (WCRP reports 2012)

Cloud Assessment Database available at

<http://climserv.ipsl.polytechnique.fr/gewexca/>

2nd workshop of Water Vapor Assessment 30 Sep – 2 Oct 2013, CIRRS, Fort Collins, USA

Aerosol Assessment: review and synthesis of literature in preparation

LandFlux Assessment: 4th workshop was held in Oct 2012 in Paris

GDAP Reference Products:

ISCCP for cloud properties, reprocessing in 2013

SRB Version 4 used in integrated product

SeaFlux produces ocean turbulent fluxes (one element of GEWEX reference products)

LandFlux: Evapotranspiration, challenge because inferred variable

AEROCOM aerosol products used in integrated product

GPCP Version 3 for precipitation in integrated product

Next GDAP meeting: jointly with GHP in Rio de Janeiro 2-6 Sep 2013

Working Group-Ultraviolet

Julian Gröbner and Mario Blumthaler

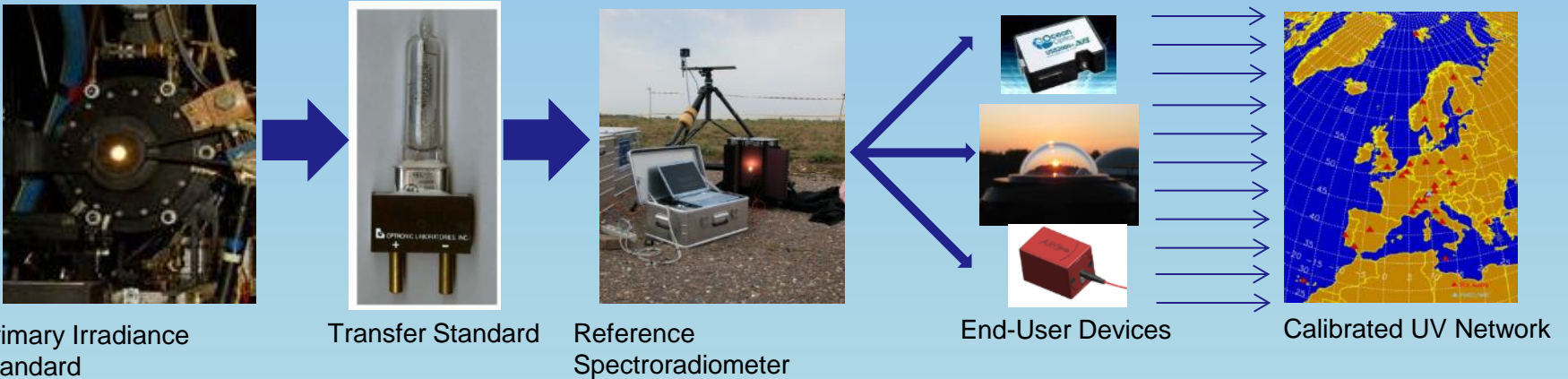
Overview of Activities 2012/2013

- The WMO has formally appointed the PMOD/WRC with the operation of a World Calibration Center for UV Radiation since January 2013.
- European Metrology Research Programme:
 - Project ENV03-SolarUV has just reached half-time, with very promising results so far.
- Quality Assurance using QASUME reference spectroradiometer
 - La Reunion Island, April 2013
 - 8th RBCC-E Campaign, Spain, June 2013



<http://projects.pmodwrc.ch/env03/>

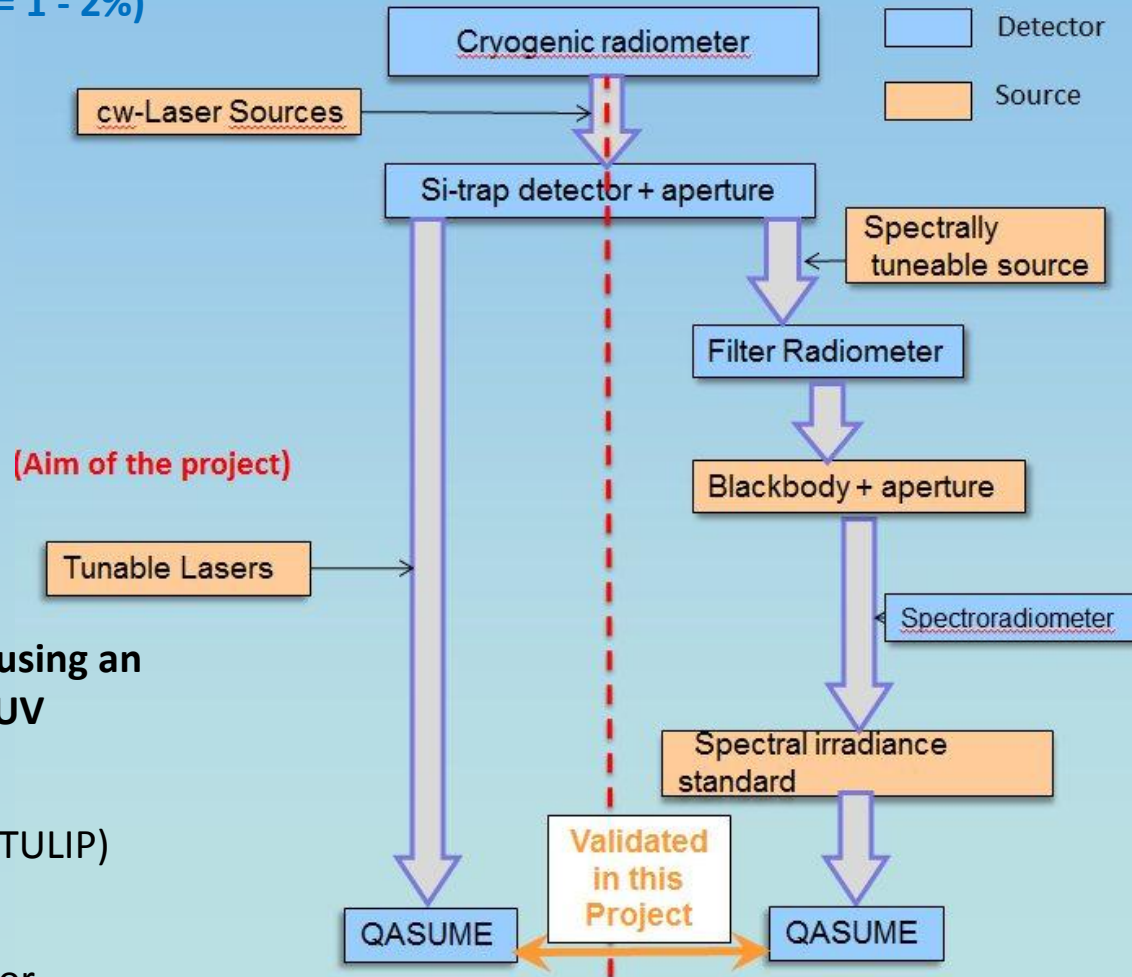
- Enhance the **reliability** of spectral solar UV radiation measured at the Earth surface
- Develop new **techniques and devices** for **traceability** better than 2% (now 5%) and for **cost-effective** array-spectroradiometer in UV monitoring networks
- Intercomparison Campaigns and Workshops



- **Project Coordination:** *pmod wrc* *Dr. Julian Gröbner, Davos*
- **Duration:** 2011 - 2014
- **Total Budget:** 3.9 M€
- **8 Partners EU-NMI; 2 Industry; 2 Universities; > 5 Collaborators**

Spectral Irradiance Traceability

Goal: Shorten the traceability chain of solar UV measurements to SI units and reduce transfer uncertainties ($U = 1 - 2\%$)

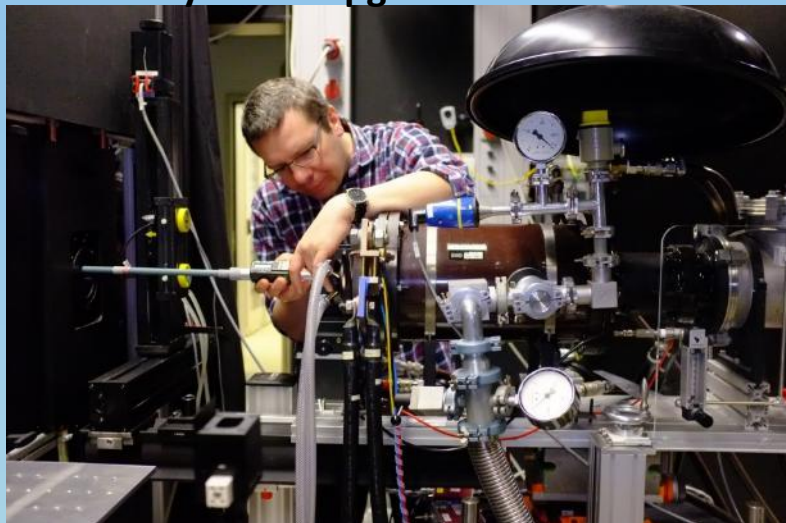


➤ **Detector-based traceability chain using an absolute radiometer and tunable UV laser facility (PTB)**

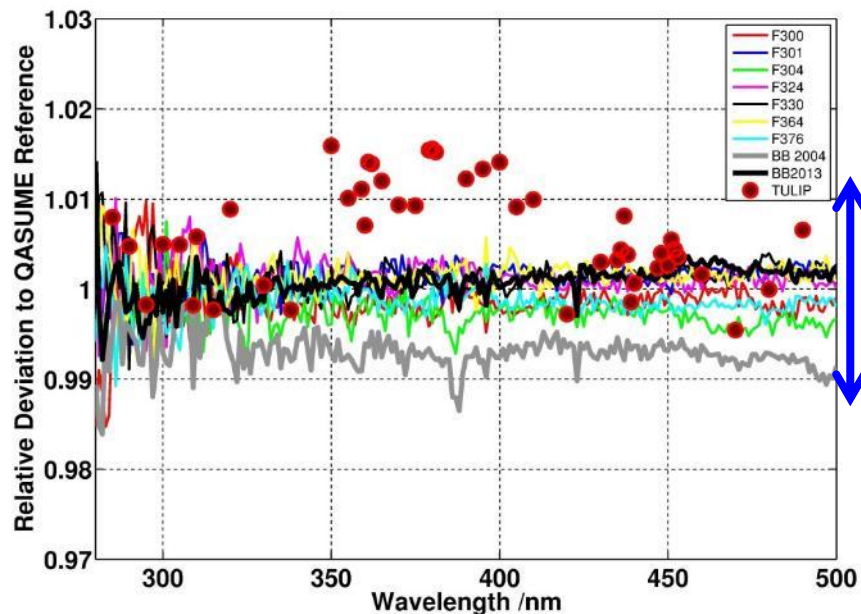
- Tuneable laser source 280 – 500 nm (TULIP)
- Traceability to the **primary standard** cryogenic radiometer via a trap detector

Validation of the QASUME irradiance reference at PTB

Blackbody BB3200pg at PTB



QASUME Validation at PTB in 2004 and 2013



±1.2%

Tuneable Laser facility TULIP



Gröbner J., and P. Sperfeld, Direct traceability of the portable QASUME irradiance scale to the primary irradiance standard of the PTB, *Metrologia*, **42**, 134–139, 2005.

Outlook

- Follow-Up Proposal for ENV03 is under way – Submission deadline 1 October 2013
- UV Workshop at PMOD/WRC on 27 – 28 August 2013
- Solar UV Intercomparison of spectroradiometers in July 2014 at PMOD/WRC
- New IRC Members to participate at the Working-Group

DACA-13 Solar UV Radiation in Mountainous Regions

10 Presentations , 7 Oral Presentations (one cancelled), 3 Poster

2 main Themes:

1) Solar UV radiation at high elevations

- FR-49_B6 : High solar UV exposures at Plateau Rosà (3500 m a.s.l) in Valle d'Aosta region, Italy
- FR-50_B6 : UV radiation statistics at two stations over Tibetan Plateau and Loess Plateau
- Fr: 10:45 UV measurements at mountain sites (Europe, and South America)

2) Albedo effects on solar UV radiation: Mountains and Polar Regions

- Fr: 8:15 Effective solar UV albedo retrieval to reconstruct the areal mean snow depth
- Fr: 8:45 Effective albedo retrieval from spectral UV measurements using 3-D modelling of inhomogeneous topography
- Fr: 9:00 Solar irradiance in the Arctic: measurements and 3D modelling
- Fr: 9:15 Determination of the underlying effective albedo at Izaña high mountain station

Advance Highlights of DACA-13 Sessions



Suggestions by:

Werner Schmutz:

Session «Sun-Earth Connection Processes» on Friday

Remark: SOURCE-scientists are unfortunately missing, otherwise good participation

Julian Gröbner:

Session «Solar ultra-violet radiation in mountainous regions»

On Friday

Report on IAMAS Business Meeting



Werner's Report:

1. Next IAMAS meeting will take place on
2017 in Capetown, South Africa
2. Endorsement of ICCP statement

Dear IRC Commissioners

During the first IAMAS business meeting at DACA-13 a statement of the International Commission on Clouds and Precipitation (ICCP) on Radiation Management was brought to our attention. The ICCP will discuss at their DACA-13 business meeting if they will endorse it. We, the IRC, will also discuss the statement under agenda item 10 at our business meeting. If the IRC decides positively for an eventual adoption, all members would vote by e-mail for a definite endorsement in the next days.

Best Regards

Werner

Report on IAMAS Business Meeting



After Discussion with the attending commissioners it was decided:

Decision:

IRC writes an additional statement, endorsing the statements of ICCP and IAMAS.

(Voting: 11=action; 1=no action; 2= abstentions)

Decision:

Creating IRC writing commission:

Chair: B.J. Sohn; Members: B. Cahalan, C. Stubenrauch, W.Schmutz and ev. Peter Pilewskie.

The writing commission will prepare a first draft and then send this draft to all commissioners and requests for comments.

Other Business



Luca Egli

«Since only a few commissioners were able to attend this BM, the minutes of the BM should include all informations presented.

Therefore, the minutes consists of the presentations including all decisions and actions discussed.»

The commissioners agreed to compile the minutes in this format.

Informal Dinner



Hotel Schatzalp,
Davos, Switzerland

