Radiation Budget Workshop –ECMWF Reading

Arrival and registration

On arrival at ECMWF please indicate to security you are attending the Earth Radiation Budget Workshop. All registered participants will be listed with security. Registration and signing in for the meeting will take place in the Weather Room (by reception). All meeting talks will take place in the Lecture Theatre, with breaks in the lobby area.

Details of ECMWF location can be found at

http://www.ecmwf.int/en/forecasts/charts/product-descriptions/Location

Submitted science presentations

Please be aware that some submitted science presentations have been scheduled as posters and the remainder as talks. Please check the format and time of your scheduled presentation.

Posters

A drinks reception and poster session will take place in the Weather Room on Wednesday evening starting immediately after the last talk at 5.40pm. Poster display boards are suitable for standard A0 size posters in portrait orientation (841mm width x 1189mm height). Posters can be put up during lunchtime on Wednesday and should be in place before the start of the last talk session at 4pm on Wednesday. It is expected that you will be available to discuss your poster during the reception.

Talks

Invited talks will be 35 minutes plus 5 minutes for questions. Other science presentations will be 17 minutes plus 3 minutes for questions. Technical session talks vary in length as indicated on the agenda. Please ensure that your talk is uploaded to the equipment during the break before your session at the very latest.

Tuesday 18th October

GERB technical Session 9am start

GERB Project overview	Helen Brindley (Imperial) (15mins)
GERB operations and calibration report	James Rufus & Jacqui Russell (Imperial) (35mins)
GGSPS Processing and archive status	Andy Smith (RAL) (15mins)
ROLLS Processing and archive status	Alessandro Ipe (RMIB) (10mins)
GERB HR edition 1 dataset release	Edward Baudrez (RMIB) (20mins)
Ed 2 Calibration updates	Jacqui Russell (Imperial) (15mins)
Ed 2 L2 GERB processing	Alessandro Ipe (RMIB) (20mins)

Break 11.10-11.30 (lobby)

ScaRaB technical Session 11.30am

ScaRaB Mission status and instrument performances	Thierry Tremas (CNES)
ScaRaB after 5 years in orbit: instrument and data quality status	Jean-Louis Raynaud
ScaRaB-MT data products Algorithms and Validation	Patrick Raberanto (LMD/CNRS)
Status of ScaRAB/MT TOA flux data from ISRO	Sathiyamoorthy Veerappan (ISRO)

Lunch 1-2pm

CERES and ScaRaB comparison Campaigns, method schedule for rendez-vous and results	Olivier Chomette (LMD/CNRS) & Michel Capderou (LMD/CNRS)
ScaRaB- CERES impact of methodology on intercomparison results	Thierry Tremas (CNES)

CERES technical session 2:40pm start

State of CERES	Norman Loeb (NASA Langley) (20 mins)
CERES instrument status FM1-FM5	Susan Thomas (SSAI/ NASA Langley) (30 mins)

Break 3.30-3:50pm (lobby)

RBI status update	Kory Priestley (NASA Langley) (20 mins)
Radiometric System Model of RBI	Anum Barki (NASA Langley) (20 mins)
CERES cloud working group report, Part 1	Patrick Minnis (NASA LaRC) (20 mins)
CERES cloud working group report Part 2	William Smith (NASA LaRC) (20 mins)
CERES ADM working group update	Su Wenying (NASA LaRC) (20 mins)

Adjourn 5.30pm

6.30pm Evening Science teams meal at Zero Degrees, Reading (9 Bridge Street, RG1 2LR)– Dutch treat (all welcome).

Wednesday 19th October

CERES technical session continues 9am start

SOFA and TSI data status — David Kratz (NASA LaRC) (20 mins)
SARB working group update — Seiji Kato (NASA LaRC) (20 mins)
TISA working group report — David Doelling (NASA LaRC) (30 mins)
EBAF-TOA update — Norman Loeb (NASA LaRC) (20 mins)
EBAF-SFC update — Seiji Kato (NASA LaRC) (15 mins)

Break 10.45—11.05 (lobby)

CERES FLASHFlux Working Group Progress and Data Usage — Paul Stackhouse (NASA LaRC) (20 mins)
MERRA-2 Energy and Water Cycles and prospects for next Reanalysis — Michael Bosilovich (NASA GSFC GMAO) (20 mins)
CERES DATA management activities status — Jonathan Gleason (NASA LaRC) (20 mins)
Engaging citizen scientists to enhance cloud information from satellite remote sensing — Patrick Taylor or Bill Smith pp Sarah McCrea (15 mins)

Discussion Session: Observing requirements for ERB 12:20 pm start

Lunch 1-2pm

Science presentations

contributed papers are 20' which is to include 3' questions, invited presentations are 40' including 5' questions.

Climate response 2pm

Invited talk: The inconsistency of transient climate response — **Jonathan Gregory (NCAS-Climate, Reading, UKMO)**
The dependence of Earth's radiative fluxes and climate sensitivity on evolving patterns of tropical Pacific SSTs — Timothy Andrews (UKMO)
Hemispheric energy balance from an ocean perspective — Maria Zita Hakuba (Colorado State)
Representations of stratocumulus cloud regimes in climate models and emergent constraints in the radiative responses to future warming — Yoko Tsushima (UKMO)

Break 3.40-4pm (lobby)

Invited talk: Constraining climate sensitivity using TOA radiation measurements — **Simon Tett (Edinburgh)**
Diagnosing climate feedbacks from CERES data and comparison with climate models — Piers Forster (Leeds)
Quantifying radiative perturbations from observations — Thorsen Tyler (NPP/NASA LaRC)
Combining CERES/WFOV and reanalysis energy transports to estimate surface energy flux — Richard Allan (Reading/NCEO)

Poster session /drinks reception 5:40pm (Weather Room)

Planned Posters

Posters should be standard A0 size (portrait orientation)
841mm (width) x 1189mm (height).

1. The TOA radiation climate data records developed in the frame of EUMETSAT climate monitoring SAF — Nicolas Clerbaux (RMIB)
2. Total Solar Irradiance Data from Fengyun-3 Meteorological Satellites — Qi Jin (National Satellite meteorological center, China)
3. Monthly diurnal average GERB products for Obs4MIPs — Jacqui Russell and Richard Bantges (Imperial)
4. New approach to SW unfiltering — Steven Dewitte (RMIB)
5. Comparison of the GERB / CERES SW radiances 2004 to 2013 — Rhys Parfitt (Imperial)
6. Using satellite imagery to Identify regions affected by climate change in North Africa — Abdelali Sebbar (Maroc Meteo)
7. Generation of climate change scenarios for precipitation and temperature at local scales using SDSM in the Wami-Ruvu river basin Tanzania — Metekiya Gulacha (Climate change and water resources)
8. Composite radiative properties of tropical mesoscale convective systems over their life cycle — Thomas Fiolleau (CNRS)
9. Changes in global energy budget at the top of the atmosphere 1985-2015 — Chunlei Liu (Reading)
10. GERB observations from 41.5°E, opportunities and challenges — James Rufus (Imperial)
11. GERB edition 2 scene identification and radiance to flux improvements — Alessandro Ipe (RMIB)
12. Spatio-temporal representativeness of ground based surface solar radiation measurements — Matthias Schwarz (ETHZ)

Thursday 20th October

Cloud & aerosol 9am

Invited talk: The Earth's radiation budget in the midlatitudes: the role of supercooled liquid clouds
Alejandro Bodas-Salcedo (UKMO)

To what extent does the uncertainty in the global aerosol radiative forcing impact medium-range weather forecasting skill? Alessio Bozzo (ECMWF)

Constraining the aerosol indirect radiative forcing using satellite observations
Edward Gryspeerdt (Universitat Leipzig/Imperial)

The CERES Flux-by-Cloud type simulator and its application to GCM output Zachary Eitzen (SSAI/NASA-LaRC)

Break 10.40-11 (lobby)

Deep convection, upper tropospheric humidity and OLR: recent insights from GERB
Helen Brindley and James Ingram (Imperial)

Comparison between simulated cloud radiative forcing and CERES Measurements
Souichiro Hioki (Texas A&M)

Investigation of the residual in column integrated atmospheric energy balance using cloud objects
Seiji Kato (NASA LaRC)

Evolution of radiative properties along tropical mesoscale convective system life cycle
Dominique Bounio (CNRM, Meteo-France/CNRS)

Cloud Radiative Effect Evaluation Using CC4CL Broadband Flux Algorithm
Matt Christensen (STFC-RAL/Oxford)

Exploring Detection and Retrieval of Contiguous and Multilayer Clouds Patrick Minnis (NASA LaRC)

Lunch 1-2pm

Cloud & aerosol continued 2pm

New parameterizations to improve ice overlapping liquid cloud water content and path estimates from passive satellite imager William Smith (NASA LaRC)

Dependence of satellite retrieved cloud properties on viewing geometry by comparing ground-based measurements and retrievals Xiquan Dong (University of Arizona)

Climate cycles 2.40pm

Quantifying the contribution of different cloud types to the radiation budget in southern West Africa during the monsoon season. Peter Hill (Reading)

Understanding the El Nino Southern Oscillation Effects on Diurnal outgoing Longwave radiation
Wenying Su (NASA LaRC)

Analysis of the radiative effects of the recent El Nino Using CERES FLASHFlux and EBAF datasets
Paul Stackhouse/David Kratz (NASA LaRC)

Break 3.40 – 4.00pm (lobby)

Datasets 4.00pm

The Introduction of Earth Radiation Measurement on FY-3 series Satellites Qiu Hong (NSMC CMA)

BBR on Earthcare, instrument design and radiance and flux products Nicolas Clerbaux (RMIB)

ARISE irradiance comparison and the CERES sea ice datasets Joseph Corbett (SSAI/NASA LaRC)

MVIRI/SEVIRI TOA Radiation Datasets within the Climate Monitoring SAF Manon Urbain (RMIB)

Adjourn 5.20pm

Friday 21st October

Radiative considerations 9am

Invited talk: What is the impact of 3D radiative transfer on the global radiation budget **Robin Hogan (ECMWF)**

Uncertainties in the near-infrared radiation budget — Keith Shine (Reading)

Spectral: an underutilized dimension on the climate diagnostics and climate-change studies — Xianglei Huang (Michigan)

TOA SW clear-sky fluxes for EarthCARE's BBR: towards a global and time-invariant radiance-to-flux-converter — Florian Tornow (Free University of Berlin)

Break 10.40-11:00 (lobby)

Surface 11am

Invited talk: The surface energy budget and its representation in CMIP5 models **Martin Wild (ETHZ)**

Arctic circulation and the Arctic surface Energy budget — Patrick Taylor (NASA Langley)

Remote sensing of the surface latent heat flux — Steven Dewitte (RMIB)

Trends and variability of surface solar radiation based on satellite-derived data records from the CMSAF — Jorg Trentmann (DWD/CM-SAF)

Meeting wrap up 12:40pm

Lunch 13:00-14:00

Meeting end 14:00