

Radiation Budget Workshop –ECMWF

Reading

Tuesday 18th October

GERB technical Session 9am start

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| 1. GERB Project overview | Helen Brindley (Imperial) |
| 2. GERB operations and calibration report | James Rufus & Jacqui Russell (Imperial) |
| 3. GGSPS Processing and archive status | Andy Smith (RAL) |
| 4. ROLLS Processing and archive status | Alessandro Ipe (RMIB) |
| 5. GERB HR edition 1 dataset release | Edward Baudrez (RMIB) |
| 6. Ed 2 Calibration updates | Jacqui Russell (Imperial) |
| 7. Ed 2 L2 GERB processing | Alessandro Ipe (RMIB) |

Break

ScaRaB technical Session 11.30am

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| 8. ScaRaB Mission status and instrument performances | Thierry Tremas (CNES) |
| 9. ScaRaB after 5 years in orbit: instrument and data quality status | Jean-Louis Raynaud |
| 10. ScaRaB-MT data products Algorithms and Validation | Patrick Raberanto (LMD/CNRS) |
| 11. CERES and ScaRaB comparison Campaigns, method schedule for rendez-vous and results | Olivier Chomette (LMD/CNRS) & Michel Capderou (LMD/CNRS) |
| 12 ScaRaB- CERES impact of methodology on intercomparison results | Thierry Tremas (CNES) |

Lunch 1-2pm

CERES technical session 2:40pm start

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| 13. State of CERES | Norman Loeb (NASA Langley) |
| 14. CERES instrument status FM1-FM5 | Susan Thomas (SSAI/ NASA Langley) |

Break

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| 15. RBI status update | Kory Priestley (NASA Langley) |
| 16. Radiometric System Model of RBI | Anum Barki (NASA Langley) |
| 17. CERES cloud working group report, Part 1 | Patrick Minnis (NASA LaRC) |
| 18. CERES cloud working group report Part 2 | William Smith (NASA LaRC) |
| 19. CERES ADM working group update | Su Wenying (NASA LaRC) |

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

- 20. SOFA and TSI data status David Kratz (NASA LaRC)
- 21. SARB working group update Seiji Kato (NASA LaRC)
- 22. TISA working group report David Doelling (NASA LaRC)
- 23. EBAF-TOA update Norman Loeb (NASA LaRC)
- 24. EBAF-SFC update Seiji Kato (NASA LaRC)

Break

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

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

- 29. Background Material provided by UKMO Helen Brindley (Imperial)
- 30. Talking points Norman Loeb (NASA LaRC)

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

31. Invited talk: The inconsistency of transient climate response

Jonathan Gregory (NCAS-Climate, Reading, UKMO)

- 32. The dependence of Earth's radiative fluxes and climate sensitivity on evolving patterns of tropical Pacific SSTs Timothy Andrews (UKMO)
- 33. Hemispheric energy balance from an ocean perspective Maria Zita Hakuba (Colorado State)
- 34. 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)

35. Invited talk: Constraining climate sensitivity using TOA radiation measurements Simon Tett (Edinburgh)

- 36. Diagnosing climate feedbacks from CERES data and comparison with climate models Piers Forster (Leeds)
- 37. Quantifying radiative perturbations from observations Thorsen Tyler (NPP/NASA LaRC)
- 38. 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).

- P1. The TOA radiation climate data records developed in the frame of EUMETSAT climate monitoring SAF
Nicolas Clerbaux (RMIB)
- P2. Total Solar Irradiance Data from Fengyun-3 Meteorological Satellites
Qi Jin (National Satellite meteorological center, China)
- P3. Monthly diurnal average GERB products for Obs4MIPs
Jacqui Russell and Richard Bantges (Imperial)
- P4. New approach to SW unfiltering
Steven Dewitte (RMIB)
- P5. Comparison of the GERB / CERES SW radiances 2004 to 2013
Rhys Parfitt (Imperial)
- P6. Composite radiative properties of tropical mesoscale convective systems over their life cycle
Thomas Fiolleau (CNRS)
- P7. Changes in global energy budget at the top of the atmosphere 1985-2015
Chunlei Liu (Reading)
- P8. GERB observations from 41.5°E, opportunities and challenges
James Rufus (Imperial)
- P9. GERB edition 2 scene identification and radiance to flux improvements
Alessandro Ipe (RMIB)
- P10. Spatio-temporal representativeness of ground based surface solar radiation measurements
Matthias Schwarz (ETHZ)

Thursday 20th October

Cloud & aerosol 9am

39. Invited talk: The Earth's radiation budget in the midlatitudes: the role of supercooled liquid clouds

Alejandro Bodas-Salcedo (UKMO)

40. To what extent does the uncertainty in the global aerosol radiative forcing impact medium-range weather forecasting skill?

Alessio Bozzo (ECMWF)

41. Constraining the aerosol indirect radiative forcing using satellite observations

Edward Gryspeerdt (Universitat Leipzig/Imperial)

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

Break

43. Deep convection, upper tropospheric humidity and OLR: recent insights from GERB

Helen Brindley and James Ingram (Imperial)

44. Comparison between simulated cloud radiative forcing and CERES Measurements

Souichiro Hioki (Texas A&M)

45. Investigation of the residual in column integrated atmospheric energy balance using cloud objects

Seiji Kato (NASA LaRC)

46. Evolution of radiative properties along tropical mesoscale convective system life cycle

Dominique Bounio (CNRM, Meteo-France/CNRS)

47. Cloud Radiative Effect Evaluation Using CC4CL Broadband Flux Algorithm

Matt Christensen (STFC-RAL/Oxford)

48. Exploring Detection and Retrieval of Contiguous and Multilayer Clouds

Patrick Minnis (NASA LaRC)

Lunch 1-2pm

Cloud & aerosol continued 2pm

49. New parameterizations to improve ice overlapping liquid cloud water content and path estimates from passive satellite imager

William Smith (NASA LaRC)

50. 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

51. Quantifying the contribution of different cloud types to the radiation budget in southern West Africa during the monsoon season.

Peter Hill (Reading)

52. Understanding the El Nino Southern Oscillation Effects on Diurnal outgoing Longwave radiation

Wenying Su (NASA LaRC)

53. Analysis of the radiative effects of the recent El Nino Using CERES FLASHFlux and EBAF datasets

Paul Stackhouse/David Kratz (NASA LaRC)

Break

Datasets 4.00pm

54. The Introduction of Earth Radiation Measurement on FY-3 series Satellites

Qiu Hong (NSMC CMA)

55. BBR on Earthcare, instrument design and radiance and flux products

Nicolas Clerbaux (RMIB)

56. ARISE irradiance comparison and the CERES sea ice datasets

Joseph Corbett (SSAI/NASA LaRC)

57. MVIRI/SEVIRI TOA Radiation Datasets within the Climate Monitoring SAF

Manon Urbain (RMIB)

Adjourn 5.20pm

Friday 21st October

Radiative considerations 9am

58. Invited talk: What is the impact of 3D radiative transfer on the global radiation budget

Robin Hogan (ECMWF)

59. Uncertainties in the near-infrared radiation budget

Keith Shine (Reading)

60. Spectral: an underutilized dimension on the climate diagnostics and climate-change studies

Xianglei Huang (Michigan)

61. 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

Surface 11am

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

63. Arctic circulation and the Arctic surface Energy budget

Patrick Taylor (NASA Langley)

64. Remote sensing of the surface latent heat flux

Steven Dewitte (RMIB)

65. 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