The 21st International TOVS Study Conference (ITSC-21)

Darmstadt, Germany

PROGRAM

Last updated: 12-September-2017

**Tuesday, 28 November 2017**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>16:00-19:00</td>
<td>Registration at Darmstadtium</td>
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**Wednesday, 29 November 2017**

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<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>8:00</td>
<td>Registration (continues to 15:00)</td>
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<tr>
<td>8:30 – 9:00</td>
<td>Welcome MITCH GOLDBERG AND NIELS BORMANN (ITWG Co-chairs)</td>
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<tr>
<td>8:30 – 9:00</td>
<td>Welcome by EUMETSAT Alain Ratier</td>
</tr>
<tr>
<td>8:30 – 9:00</td>
<td>Overview of EUMETSAT</td>
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<td>8:30 – 9:00</td>
<td>Local arrangements Dieter Klaes</td>
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<td>8:30 – 9:00</td>
<td>Review of agenda Mitch Goldberg and Niels Bormann (ITWG Co-chairs)</td>
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<tr>
<th>Time</th>
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<tr>
<td>9:00 – 10:00</td>
<td>Session 1a: Community software – session dedicated to Paul van Delst (oral presentations - 12 minutes)</td>
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<tr>
<td></td>
<td>Chairs: Andrew Collard and Bill Smith</td>
</tr>
<tr>
<td>1.01</td>
<td>Benjamin Johnson CRTM Development Status and Future Plans</td>
</tr>
<tr>
<td>1.02</td>
<td>Quanhua (Mark) Liu Community Radiative Transfer Model (CRTM) Applications to Support Sensor Cal/Val and EDR Generations</td>
</tr>
<tr>
<td>1.03</td>
<td>James Hocking RTTOV Development Status</td>
</tr>
<tr>
<td>1.04</td>
<td>Liam Gumley CSPP LEO: Recent updates and support for JPSS-1</td>
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<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>10:00 – 10:15</td>
<td>Session 1b: Community radiative transfer software (poster introductions - 1 minute: no visual aids)</td>
</tr>
<tr>
<td></td>
<td>Chairs: Andrew Collard and Bill Smith</td>
</tr>
<tr>
<td>1p.01</td>
<td>Emily Huichun Liu Enhancement and Evaluation of the Community Radiative Transfer Model for Data Assimilation Application</td>
</tr>
<tr>
<td>1p.02</td>
<td>Benjamin Johnson Radar Simulation in CRTM</td>
</tr>
<tr>
<td>1p.03</td>
<td>Pascale Roquet RTTOV GUI, the graphical user interface for RTTOV.</td>
</tr>
<tr>
<td>1p.04</td>
<td>Marco Matricardi Modeling of nonlocal thermodynamic equilibrium effects in the classical and principal component based version of the RTTOV fast radiative transfer model</td>
</tr>
<tr>
<td>1p.05</td>
<td>Cristina Lupu Evaluation of the radiative transfer model RTTOV-12 at ECMWF</td>
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<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>10:15 – 10:45</td>
<td>Break and poster viewing 1b</td>
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<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>10:45 – 11:15</td>
<td>Session 1c: Community software (oral presentations - 12 minutes)</td>
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<tr>
<td></td>
<td>Chairs: Allen Huang, Vivienne Payne and Guido Masiello</td>
</tr>
<tr>
<td>1.05</td>
<td>Kathleen Strabala NASA International MODIS/AIRS Processing Package (IMAPP): Current Status and Future Plans</td>
</tr>
<tr>
<td>1.06</td>
<td>Nigel Atkinson NWP SAF software deliverables: 2017 to 2022</td>
</tr>
</tbody>
</table>
### 11:15 – 11:35  Session 1d: Community software and direct broadcasting (poster introductions - 1 minute: no visual aids)

**Chairs:** Allen Huang, Vivienne Payne and Guido Masiello

<table>
<thead>
<tr>
<th>Time</th>
<th>Presenter</th>
<th>Title</th>
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<tbody>
<tr>
<td>1p.06</td>
<td>Scott Mindock</td>
<td>CSPP SDR 3.0 Support In The CSPP-GEO Direct Broadcast Package</td>
</tr>
<tr>
<td>1p.07</td>
<td>Geoffrey Cureton</td>
<td>Himawari Support In The CSPP-GEO Direct Broadcast Package</td>
</tr>
<tr>
<td>1p.08</td>
<td>Graeme Martin</td>
<td>CSP Geo direct broadcast software for GOES-16 and Himawari-8: project overview and lessons learned</td>
</tr>
<tr>
<td>1p.09</td>
<td>Nick Bearson</td>
<td>CSPP VIIRS Flood Detection</td>
</tr>
<tr>
<td>1p.10</td>
<td>Pascal Brunel</td>
<td>AAPP-8 imager cluster generation</td>
</tr>
<tr>
<td>1p.11</td>
<td>Walter Wolf</td>
<td>Planned Updates to the STAR BUFR and GRIB Tailoring System for Satellite Operational Products</td>
</tr>
<tr>
<td>1p.12</td>
<td>Thomas Rink</td>
<td>HYDRA2</td>
</tr>
<tr>
<td>1p.13</td>
<td>Gloria Cristina Pujol</td>
<td>Contributions of DBNet South America-Argentina Component for NWP Community</td>
</tr>
<tr>
<td>1p.14</td>
<td>Jin Woo</td>
<td>Current Status and Future Plan of Direct-Readout LEO Weather Satellite Operation in NMSC/KMA</td>
</tr>
<tr>
<td>1p.15</td>
<td>Jessica Braun</td>
<td>Aqua and Terra Direct Broadcast Processing at CIMSS/SSEC</td>
</tr>
<tr>
<td>1p.16</td>
<td>Liam Gumley</td>
<td>NOAA DB Network: Providing advanced sounder data in near real-time for NWP</td>
</tr>
</tbody>
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### 11:35 – 12:20  Session 2a: Radiative transfer (oral presentations - 12 minutes)

**Chairs:** Vivienne Payne, Guido Masiello and Allen Huang

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<thead>
<tr>
<th>Time</th>
<th>Presenter</th>
<th>Title</th>
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<tbody>
<tr>
<td>2.01</td>
<td>Raymond Armante</td>
<td>TIR and SWIR level-1 and level-2 products validation: a deeper insight to updated of the 4A line-by-line radiative transfer model</td>
</tr>
<tr>
<td>2.02</td>
<td>Emilien Bernard</td>
<td>The 4A/OP model: from NIR to TIR, new developments for time computing gain and validation results within the frame of international space missions</td>
</tr>
<tr>
<td>2.03</td>
<td>Niels Bormann</td>
<td>Radiative transfer along a slanted path</td>
</tr>
</tbody>
</table>

### 12:20 – 12:40  Session 2b: Radiative transfer (poster introductions - 1 minute: no visual aids)

**Chairs:** Vivienne Payne, Guido Masiello and Allen Huang

<table>
<thead>
<tr>
<th>Time</th>
<th>Presenter</th>
<th>Title</th>
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<tbody>
<tr>
<td>2p.01</td>
<td>Stephan Havemann</td>
<td>Improvements to fast radiative transfer modelling of hyperspectral infrared sounders</td>
</tr>
<tr>
<td>2p.02</td>
<td>Xavier Calbet</td>
<td>Effects of atmospheric turbulence in radiative transfer modelling</td>
</tr>
<tr>
<td>2p.03</td>
<td>Wenguang Bai</td>
<td>Estimation of CO2 column retrieval errors from ignoring 1.6μm polarization calculation in forward modeling for space-borne polarization-sensitive instruments</td>
</tr>
<tr>
<td>2p.04</td>
<td>Fuzhong Weng</td>
<td>Simulation of UV Radiance Using UNL-VRTM</td>
</tr>
<tr>
<td>2p.05</td>
<td>Raymond Armante</td>
<td>From GEISA-2015 to GEISA-2018</td>
</tr>
<tr>
<td>2p.06</td>
<td>Oleksandr Bobryshev</td>
<td>Oxygen line-mixing: Consolidating a spectroscopy for AMSU-A</td>
</tr>
<tr>
<td>2p.07</td>
<td>Emma Turner</td>
<td>Quantification of line-by-line parameter errors in the 183.31 GHz water vapour line</td>
</tr>
<tr>
<td>2p.08</td>
<td>Heather Lawrence</td>
<td>Uncertainties in the dielectric constant model for seawater used in FASTEM and implications for the calibration/validation of new microwave sounding and imaging instruments</td>
</tr>
<tr>
<td>2p.09</td>
<td>Steve J. English</td>
<td>A reference model for ocean surface emissivity from the microwave to the infrared</td>
</tr>
<tr>
<td>2p.10</td>
<td>Louis Garand</td>
<td>Accounting for variations of the trial field along the line of sight of the satellite in radiance data assimilation</td>
</tr>
</tbody>
</table>

### 12:40 – 13:30  Lunch

### 13:30 – 14:00  Poster viewing 1d, 2b
### 14:00 – 15:15 Session 3a: Calibration, validation and uncertainty (oral presentations - 12 minutes)

**Chairs:** William Bell and Bomin Sun

<table>
<thead>
<tr>
<th>3.01</th>
<th>Tim Hewison</th>
<th>Global Space-based Inter-Calibration System (GSICS) Infrared Reference Sensor Traceability and Uncertainty</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.02</td>
<td>Gerrit Holl</td>
<td>A new Fundamental Climate Data Record (FCDR) for nearly 40 years of measurements from the High resolution Infrared Radiation Sounder (HIRS) based on a metrologically traceable uncertainty analysis</td>
</tr>
<tr>
<td>3.03</td>
<td>Fabien Carminati</td>
<td>Characterisation of numerical weather prediction model biases for improved satellite cal/val.</td>
</tr>
<tr>
<td>3.04</td>
<td>Alexander Uspensky</td>
<td>Cal/Val studies for microwave and infrared sounding data from METEOR-M series satellites</td>
</tr>
<tr>
<td>3.05</td>
<td>Stuart Newman</td>
<td>An assessment of Meteor-M N2 MTVZA imager/sounder data at the Met Office and ECMWF for GAIA-CLIM</td>
</tr>
</tbody>
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### 15:15 – 15:30 Session 3b: Calibration, validation and uncertainty (poster introductions - 1 minute: no visual aids)

**Chairs:** William Bell and Bomin Sun

<table>
<thead>
<tr>
<th>3p.01</th>
<th>Stuart Newman</th>
<th>The GAIA-CLIM project</th>
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<tbody>
<tr>
<td>3p.02</td>
<td>Stefano Migliorini</td>
<td>Robust quantification of uncertainty on short-range model forecasts in radiance space based on reference sonde data</td>
</tr>
<tr>
<td>3p.03</td>
<td>Brett Candy</td>
<td>Assessment and assimilation of microwave imager observations in NWP global models</td>
</tr>
<tr>
<td>3p.04</td>
<td>Heather Lawrence</td>
<td>Assimilation of FY-3C MWHS-2 at ECMWF and evaluation of the microwave imager FY-3C MWRI at ECMWF and the Met Office</td>
</tr>
<tr>
<td>3p.05</td>
<td>Marc Prange</td>
<td>Natural and vicarious calibration targets for satellite based microwave sensors</td>
</tr>
<tr>
<td>3p.06</td>
<td>Lihang Zhou</td>
<td>Post Launch Calibration and Validation of JPSS-1 Sensor Data Records (SDRs) and Environment Data Records (EDRs) Algorithms</td>
</tr>
<tr>
<td>3p.07</td>
<td>Joe Taylor</td>
<td>Current Status of the CrIS Calibration Activities at UW-SSEC</td>
</tr>
<tr>
<td>3p.08</td>
<td>Ninghai Sun</td>
<td>Advances in Suomi NPP ATMS Data Reprocessing</td>
</tr>
<tr>
<td>3p.09</td>
<td>Bomin Sun</td>
<td>Vaisala Radiosonde RS92 to RS41 Transition: Implications for Satellite Data Cal/Val</td>
</tr>
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### 15:30 – 16:00 Break and poster viewing 3b

### 16:00 – 17:15 Session 4a: New and current observations (oral presentations - 12 minutes)

**Chairs:** Peng Zhang and Stephen English

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<tr>
<th>4.01</th>
<th>Qifeng Lu</th>
<th>The status of FY-3C and FY-4A in NWP and the preparation of FY-3D for NWP</th>
</tr>
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<tr>
<td>4.02</td>
<td>Peiming Dong</td>
<td>Study on the simulation and bias characteristics of FY-4A GIIRS observation</td>
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<tr>
<td>4.03</td>
<td>Amy Doherty</td>
<td>Investigation into the impact of SAPHIR on humidity analyses at the Met Office</td>
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<tr>
<td>4.04</td>
<td>Indira Rani</td>
<td>Impact of the assimilation of water vapor imager radiances from INSAT 3D and 3DR satellites in the NCMRWF Unified Model</td>
</tr>
<tr>
<td>4.05</td>
<td>Hyeyoung Kim</td>
<td>Application of Microwave Satellite Data to KMA Local Data Assimilation and Prediction System (LDAPS)</td>
</tr>
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### 17:15 – 17:30 Session 4b: New and current observations (poster introductions - 1 minute: no visual aids)

**Chairs:** Peng Zhang and Stephen English

<table>
<thead>
<tr>
<th>4p.01</th>
<th>Andrew Collard</th>
<th>Plans for the utilization of JPSS and GOES-R satellite systems</th>
</tr>
</thead>
<tbody>
<tr>
<td>4p.02</td>
<td>Yoichi Hirahara</td>
<td>Operational use of Suomi NPP ATMS radiance data in JMA’s global NWP system</td>
</tr>
<tr>
<td>4p.03</td>
<td>Yasutaka Murakami or Masahiro Kazumori</td>
<td>Assimilating clear-sky radiance of SSMIS humidity sounding channels in the JMA global NWP system with newly developed cloud detection algorithm</td>
</tr>
</tbody>
</table>
Development of the SSMIS processing system and their impacts on the 3DVAR in KIAPS

Microwave Radiance Assimilation at NRL: Advanced Techniques, Developments, and Future Sensors

Salvaging of the Final SSMIS Flight Unit for a Future Flight-of-Opportunity

Recent Improvements to the Assimilation of Microwave Sounders in the Met Office NWP system

Assimilation of Satellite Radiances and Soundings for Typhoon Nepartak (2016) Forecast

Icebreaker, supported by DWD (with poster viewing 1b, 1d, 2b, 3b, 4b)

Thursday, 30 November 2017

8:30 – 10:00 Session 5a: Assimilation - clouds (oral presentations - 12 minutes)
Chairs: Kozo Okamoto and Christina Köpken-Watts

5.01 Alan Geer All-sky assimilation of IASI upper-troposphere water vapour channels

5.02 Ed Pavelin Improved assimilation of cloud-affected hyperspectral infrared radiances

5.03 Imane Farouk Towards the improvement of the assimilation of cloudy IASI observations in numerical weather prediction

5.04 Masahiro Kazumori Development of an all-sky assimilation of microwave imager and sounder radiances for the Japan Meteorological Agency global numerical weather prediction system

5.05 Peter Weston Assimilation of AMSU-A in the presence of cloud and precipitation

5.06 Stefano Migliorini All-sky assimilation of microwave sounders at the Met Office

10:00 – 10:15 Session 5b: Clouds: assimilation and radiative transfer (poster introductions - 1 minute: no visual aids)
Chairs: Kozo Okamoto: Clouds Köpken-Watts

5p.01 Katrin Lonitz Matching scales of observed and simulated cloud and precipitation processes seen in the microwave spectrum

5p.02 Yanqiu Zhu Further developments in the all-sky microwave radiance assimilation and expansion to ATMS in the GSI at NCEP

5p.03 Li Bi All-sky infrared radiances assimilation of selected humidity sensitive IASI channels at NCEP/EMC

5p.04 Kozo Okamoto Evaluation and assimilation of all-sky infrared radiances of Himawari-8

5p.05 Alan Geer Scattering from non-spherical frozen particles in all-sky microwave radiative transfer

5p.06 Victoria Galligani Evaluation and comparison of simulated microwave cloudy radiances using RTTOV-SCAT and ARTS

5p.07 Jerome Vidot Hyperspectral IR cloudy radiance and Jacobian simulations: comparison between RTTOV and LIDORT

10:15 – 10:45 Break and poster viewing 5b

10:45 – 12:15 Session 6a: Climate (oral presentations - 12 minutes)
Chairs: Hank Revercomb and Claudia Stubenrauch

6.01 Claudia J. Stubenrauch The role of upper tropospheric cloud systems in climate: building observational metrics for Process Evaluation Studies

6.02 Martin Stengel 35 years of cloud observations based on HIRS measurements

6.03 Christoforos Tsamalis Evaluation of the CM SAF Upper Tropospheric Humidity (UTH) climate data record from AMSU-B/MHS sounders

6.04 Cheng-Zhi Zou Evaluation of Inter-Sensor Biases between SNPP/ATMS and POES/AMSU-A
6.05  Eric Fetzer  Comparisons of Level 2 Temperature and Water Vapor from AIRS, IASI and CrIMSS
6.06  William Bell  The use of satellite radiances in the C3S ERAS Reanalysis

12:15 – 12:30  Session 6b: Climate (poster introductions - 1 minute: no visual aids)
Chairs: Hank Revercomb and Claudia Stubenrauch

<table>
<thead>
<tr>
<th>6p.01</th>
<th>Eui-Seok Chung</th>
<th>An assessment of the consistency between satellite measurements of upper tropospheric water vapor</th>
</tr>
</thead>
<tbody>
<tr>
<td>6p.02</td>
<td>Nathalie Selbach</td>
<td>The GEWEX water vapor assessment (G-VAP) – results from inter-comparisons and stability analysis.</td>
</tr>
<tr>
<td>6p.03</td>
<td>Nathalie Selbach</td>
<td>Climate Data Records and user service of the EUMETSAT Satellite Application Facility on Climate Monitoring</td>
</tr>
<tr>
<td>6p.04</td>
<td>Timo Hanschmann</td>
<td>Preparing HIRS radiances as input to Reanalysis within the Copernicus Climate Change Service</td>
</tr>
<tr>
<td>6p.05</td>
<td>Cyril Crevoisier</td>
<td>Towards homogeneous reference datasets from Metop-A and Metop-B validated observations</td>
</tr>
<tr>
<td>6p.06</td>
<td>Mayte Vasquez</td>
<td>Intercomparisons and Validation of IASI L1 Reprocessed Data of MetOp-A</td>
</tr>
<tr>
<td>6p.07</td>
<td>Mohamed Dahoui</td>
<td>Detection of trends and variability of certain atmospheric features by analysing long time series of satellite monitoring statistics</td>
</tr>
<tr>
<td>6p.08</td>
<td>Xiao-Hai Yan</td>
<td>An Overview of the Global Warming &quot;Hiatus&quot; and New Studies</td>
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12:30 – 13:30  Lunch

13:30 – 14:00  Poster viewing 6b

14:00 – 14:40  Session 7: NWP centre reports (poster introductions - 3 minutes, 1 slide)
Chairs: Dirceu Herdies and Eunhee Lee

<table>
<thead>
<tr>
<th>7p.01</th>
<th>Norio Kamekawa (JMA)</th>
<th>Recent upgrades of satellite radiance data assimilation at JMA</th>
</tr>
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<tbody>
<tr>
<td>7p.02</td>
<td>Mohamed Dahoui (ECMWF)</td>
<td>Overview of ECMWF NWP changes since ITSC-20</td>
</tr>
<tr>
<td>7p.03</td>
<td>Christina Köpken-Watts (DWD)</td>
<td>Developments in satellite data assimilation at DWD since ITSC-XX</td>
</tr>
<tr>
<td>7p.04</td>
<td>Nadia Fourrie, Florian Suzat (Météo France)</td>
<td>Overview of infrared radiance assimilation in Météo-France models/ Ongoing developments on the use of microwave sounders and imagers at Météo-France</td>
</tr>
<tr>
<td>7p.05</td>
<td>William Bell (Met Office)</td>
<td>NWP Centre Update: Met Office</td>
</tr>
<tr>
<td>7p.06</td>
<td>Fiona Smith (BoM)</td>
<td>Satellite assimilation at the Bureau of Meteorology</td>
</tr>
<tr>
<td>7p.07</td>
<td>Indira Rani (NCMRWF)</td>
<td>NCMRWF NWP status</td>
</tr>
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Action Items from ITSC-20
Moderators: Mitch Goldberg and Niels Bormann

14.40-14.50  CGMS report, 5 min (Mitch Goldberg)

14.50-15.30  Working group action items from ITSC-20 (10 minutes)
•  NWP (Fiona Smith and Andrew Collard)
•  Radiative transfer and surface properties (Marco Matricardi and Benjamin Johnson)
•  Advanced Sounders (Dieter Klaes and Bill Smith)

15.30-16.00  BREAK (poster viewing 7)

16.00-16.40  Working group action items from ITSC-20 (10 minutes)
•  Products and Software (Nigel Atkinson and Liam Gumley)
•  Climate (Nathalie Selbach and Cheng-Zhi Zou)
•  International and Future Systems (Stephen English and Stephan Bojinski (tbc))
16:40-17:05  Special topics (10 minutes)
- World Radiocommunication Conference 2019 (WRC-19) items of interest to ITSC (Richard Kelley)
- DBNet implementation status and planning (Mikael Rattenborg)

17.05-17.15  Technical sub-group report (5 minutes)
- Direct broadcast packages (Liam Gumley)

17.30-18.30  Technical Sub-Group meetings
- RTTOV (James Hocking)
- CRTM (Benjamin Johnson)
- RARS/DBNet and direct broadcast packages (Liam Gumley, Mikael Rattenborg)

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Friday, 1 December 2017

### 8:30 – 9:45 Session 8a: Hyperspectral IR (oral presentations - 12 minutes)
**Chairs:** Nigel Atkinson and Thomas August

<table>
<thead>
<tr>
<th>Time</th>
<th>Speaker</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.01</td>
<td>Dorothee Coppens</td>
<td>MTG-IRS L1 processing overview and performances</td>
</tr>
<tr>
<td>8.02</td>
<td>Hank Revercomb</td>
<td>Correction to Remove the Residual Responsivity Dependence of Spectral Instrument-Line-Shapes for Fourier Transform Spectrometers</td>
</tr>
<tr>
<td>8.03</td>
<td>Yong Chen</td>
<td>Reprocessing of Suomi NPP CrIS SDR and Impacts on Radiometric and Spectral Long-term Accuracy and Stability</td>
</tr>
<tr>
<td>8.04</td>
<td>Tim Hultberg</td>
<td>A global-local hybrid approach to retain new signals in hyperspectral PC products</td>
</tr>
<tr>
<td>8.05</td>
<td>Carmine Serio</td>
<td>Determination of the experimental error of high spectral resolution infrared observations from spectral residuals: application to IASI</td>
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### 9:45 – 10:15 Session 8b: Composition (poster introductions - 1 minute: no visual aids)
**Chairs:** Nigel Atkinson and Thomas August

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<thead>
<tr>
<th>Time</th>
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<th>Title</th>
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<tbody>
<tr>
<td>8p.01</td>
<td>Olivier Membrive</td>
<td>Retrieval of the 3 main anthropogenic greenhouse gases from IASI: status and lessons learned for validation</td>
</tr>
<tr>
<td>8p.02</td>
<td>Guido Masiello</td>
<td>Physically-based simultaneous retrieval for CO, CO2, CH4, HNO3, NH3, OCS and N2O from IASI observations and inter-comparison with in situ observations and AIRS, GOSAT, OCO-2 satellite products</td>
</tr>
<tr>
<td>8p.03</td>
<td>Vivienne Payne</td>
<td>Harnessing the power of sounders for atmospheric composition and chemical assimilation</td>
</tr>
<tr>
<td>8p.04</td>
<td>Virginie Capelle</td>
<td>A decade of Infrared dust aerosol characteristics (AOD and mean layer altitude) retrieved daily from IASI</td>
</tr>
<tr>
<td>8p.05</td>
<td>Alexander Polyakov</td>
<td>Technique and results of retrieving the total ozone content using satellite IR measurements from «Meteor-M» No 2</td>
</tr>
<tr>
<td>8p.06</td>
<td>Jonghyuk Lee</td>
<td>Uncertainty of temperature sounding caused by the variation of CO2 concentration</td>
</tr>
<tr>
<td>8p.07</td>
<td>Chien-Ben Chou</td>
<td>Using MTSAT-2 Visible Images to Retrieve Aerosol Optical Depth</td>
</tr>
<tr>
<td>8p.08</td>
<td>Dirceu Luis Herdies</td>
<td>Estimation of the Aerosols Direct Radiative Forcing in the Amazon region using MODIS</td>
</tr>
<tr>
<td>8p.09</td>
<td>Olivier Coopmann</td>
<td>Towards a strengthening of the coupling of Numerical Weather Prediction and Chemistry Transport Models to improve the retrieval of thermodynamic fields from infra-red passive sounders: The ozone case</td>
</tr>
<tr>
<td>8p.10</td>
<td>Olivier Coopmann</td>
<td>Greenhouse gases in-situ profiles from the APOGEE campaign in support to satellite infrared sounder assimilation</td>
</tr>
</tbody>
</table>

10:15 – 10:45  Break and poster viewing 8b
### Session 9a: Hyperspectral IR assimilation (oral presentations - 12 minutes)

**Chairs:** Fiona Smith and Louis Garand

<table>
<thead>
<tr>
<th>9.01</th>
<th>Vincent Guidard</th>
<th>What is the impact of IASI in global NWP?</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.02</td>
<td>Norio Kamekawa</td>
<td>Assimilation of Suomi-NPP/CrIS radiances into the JMA’s global NWP system</td>
</tr>
<tr>
<td>9.03</td>
<td>Marco Matricardi</td>
<td>The use of reconstructed radiances to assimilate the full IASI spectrum at ECMWF</td>
</tr>
<tr>
<td>9.04</td>
<td>Jun Li</td>
<td>Impact of assimilating the VIIRS-based CrIS cloud-cleared radiances on hurricane forecasts</td>
</tr>
<tr>
<td>9.05</td>
<td>Kirsti Salonen</td>
<td>Impact of hyperspectral IR radiances on wind analyses</td>
</tr>
<tr>
<td>9.06</td>
<td>David Santek</td>
<td>Feature-tracked 3D winds from hyperspectral infrared sounders: Status and requirements for future missions</td>
</tr>
</tbody>
</table>

### Session 9b: Assimilation of IR observations (poster introductions - 1 minute: no visual aids)

**Chairs:** Fiona Smith and Louis Garand

| 9p.01 | Reima Eresmaa   | The current impact of infrared radiances in the ECMWF NWP system |
| 9p.02 | James Jung      | Preparing for CrIS Full Spectral Resolution in the NCEP Global Forecast System |
| 9p.03 | Euijong Kang    | CrIS channel selection for the KMA UM data assimilation based on an iterative method |
| 9p.04 | Kirsti Salonen  | MTG-IRS level 2 data assimilation into the ECMWF model |
| 9p.05 | Young-Chan Noh  | Impact of assimilation of a new set of IASI channels on the UM precipitation forecast over East Asia |
| 9p.06 | Alain Beaulne   | Impact of assimilating multispectral radiances from Himawari and Meteosat satellites on global forecasts |
| 9p.07 | Chris Burrows   | Assimilation of geostationary radiances at ECMWF |
| 9p.08 | Ruth B.E. Taylor| Use of geostationary imager clear-sky radiances in Met Office Global NWP |
| 9p.09 | Haixia Liu      | Comparison among three cloud-clearing radiance products |
| 9p.10 | Seon Ki Park    | Assessing Potential Impact of Air Pollutants Observations from Geostationary Satellite on Air Quality Prediction through OSSEs |

### Lunch

**12:35 – 13:30**

### Poster viewing 9b

**13:30 – 14:00**

### Session 10a: Land surface studies (oral presentations - 12 minutes)

**Chairs:** Eva Borbas and Ben Ruston

<table>
<thead>
<tr>
<th>10.01</th>
<th>Reima Eresmaa</th>
<th>Assimilation of tropospheric-sensitive infrared radiances over land</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.02</td>
<td>Virginie Capelle</td>
<td>Impact of dust aerosols on the retrieval of IR land surface emissivity spectrum: a new simultaneous approach accounting for dust characteristics and surface temperature from IASI</td>
</tr>
<tr>
<td>10.03</td>
<td>Rory Gray</td>
<td>A Dynamic Infrared Land Surface Emissivity Atlas based on IASI Retrievals</td>
</tr>
</tbody>
</table>

### Session 10b: Land surface studies (poster introductions - 1 minute: no visual aids)

**Chairs:** Eva Borbas and Ben Ruston

<table>
<thead>
<tr>
<th>10p.01</th>
<th>A. Burini</th>
<th>IASI-based near-real time and monthly mean surface emissivity products</th>
</tr>
</thead>
<tbody>
<tr>
<td>10p.02</td>
<td>Eva Borbas</td>
<td>The status of the Combined ASTER and MODIS Emissivity Over Land (CAMEL) Product</td>
</tr>
<tr>
<td>10p.03</td>
<td>Chawn Harlow</td>
<td>MACSSIMIZE: An upcoming campaign to focus on the development and evaluation of Arctic snow emissivity models suitable for use in assimilation of satellite microwave sounder data</td>
</tr>
<tr>
<td>10p.04</td>
<td>Niels Bormann</td>
<td>The current forecast impact of surface-sensitive microwave radiances over land and sea-ice in the ECMWF system</td>
</tr>
<tr>
<td>10p.05</td>
<td>Jisoo Kim</td>
<td>The characteristics of the real-time land surface emissivity of the ATMS data for numerical weather prediction model</td>
</tr>
<tr>
<td>10p.06</td>
<td>Keyi Chen</td>
<td>Increased use of microwave humidity sounding data from the FY-3 series in the ECMWF assimilation system</td>
</tr>
<tr>
<td>10p.07</td>
<td>Cristina Lupu</td>
<td>Surface skin temperature for satellite data assimilation</td>
</tr>
<tr>
<td>10p.08</td>
<td>Sylvain Heilliette</td>
<td>Assimilation of land surface skin temperature observations derived from GOES imagery</td>
</tr>
<tr>
<td>10p.09</td>
<td>Guido Masiello</td>
<td>Implementation of a real-time Level 2 SEVIRI processor for the simultaneous physical retrieval of surface temperature and emissivity at global scale</td>
</tr>
<tr>
<td>10p.10</td>
<td>Hyun-Sung Jang</td>
<td>Use of surface observations as pseudo channels for improving AIRS temperature and moisture retrieval</td>
</tr>
<tr>
<td>10p.11</td>
<td>AK Mitra</td>
<td>Assessment of soil wetness variation for extreme events using direct broadcast receiving system at IMD</td>
</tr>
<tr>
<td>10p.12</td>
<td>Chunlei Meng</td>
<td>The Joint Land Data Assimilation System (JLDAS)</td>
</tr>
</tbody>
</table>

**15:10 – 16:00 Break and poster session for 5b, 6b, 7b, 8b, 9b, 10b**

**16:00 – 17:00 Session 11a: Retrieval products (oral presentations - 12 minutes)**
*Chairs: Tony Reale and Kathleen Strabala*

| 11.01 | Thomas August | The EUMETSAT operational IASI L2 products and services, from Global to Regional |
| 11.02 | Lihang Zhou (for Antonia Gambacorta) | Status of the NPP and J1 NOAA Unique Combined Atmospheric Processing System (NUCAPS) for atmospheric thermal sounding: recent algorithm enhancements and near real time users applications. |
| 11.03 | Sergio DeSouza-Machado | Single Footprint All-Sky Retrievals using a Fast, Accurate TwoSlab Cloud Representation |
| 11.04 | William Smith Sr. | Combining Polar Hyper-spectral and Geostationary Multi-spectral Sounding Data – A Method to Optimize Sounding Spatial and Temporal Resolution |

**17:00 – 17:20 Session 11b: Retrieval products and applications (poster introductions - 1 minute: no visual aids)**
*Chairs: Tony Reale and Kathleen Strabala*

| 11p.01 | Quanhua (Mark) Liu | Overview of JPSS-1 and Suomi NPP ATMS SDR and EDR Products |
| 11p.02 | A.K. Sharma | Exploitation of Hyperspectral Sounder and Microwaves sounder Data Products generated at NOAA/NESDIS |
| 11p.03 | F. Di Paola | Retrieval of Temperature and Water Vapor vertical profile from ATMS Measurements with Random Forests technique |
| 11p.04 | M. Crapeau | Experimenting different a priori sources for optimal estimation retrievals with IASI |
| 11p.05 | Elisabeth Weisz | Hyper-Spectral Sounder Derived Severe Weather Indices |
| 11p.06 | Nai-Yu Wang | Combining Imager and Lightning For Enhanced GOES-R Rain Estimates in the NWS Pacific Region |
| 11p.07 | Eva Borbas | The Suomi-NPP VIIRS Total Precipitable Water Product |
| 11p.08 | Junhyung Heo | Application of Cumulative Probability Distribution Function to Compositing Precipitable Water with Low Earth Orbit satellite data |
| 11p.09 | Rute Ferreira | Evaluating Satellite Estimates for Extreme Rainfall in the Southern of Brazil in high resolution |
| 11p.10 | Wei Dong | Structure Analysis of Heavy Precipitation Over the Eastern Slope of the Tibet Plateau Based on TRMM Data |
| 11p.11 | Elisabetta Ricciardelli | Analysis of heavy rainfall events occurred in Italy by using Microwave and Infrared Technique |

**17:20 – 17:50 Poster viewing 11b**
Saturday, 2 December 2017

8:30 – 12:30 Working group meetings  (Break at 10:15 – 10:45)
- Advanced Sounders (Dieter Klaes and Bill Smith)
- Climate (Nathalie Selbach and Cheng-Zhi Zou)
- Radiative transfer and surface properties (Marco Matricardi and Benjamin Johnson)

Sunday, 3 December 2017

8:30 – 12:30 Working group meetings  (Break at 10:15 – 10:45)
- NWP (Fiona Smith and Andrew Collard)
- Products and software (Nigel Atkinson and Liam Gumley)
- International (Stephen English and Stephan Bojinski (tbc))

Monday, 4 December 2017

8:30 – 9:45 Session 12a: Assimilation studies (oral presentations - 12 minutes)
Chairs: Vincent Guidard and Brett Candy

| 12.01 | John Eyre | The effect of NWP model bias on radiance bias correction schemes |
| 12.02 | Wei Han   | Constrained variational bias correction for satellite radiances assimilation |
| 12.03 | Benjamin Ruston | Radiance Bias Correction from an Alternative Analysis |
| 12.04 | Erin Jones | Benefits of Using a Variational Preprocessing Approach for the Assimilation of Satellite Radiances: An Application to Data Assimilation in Environmental Data Fusion |
| 12.05 | Sid Boukabara | Exploring Using Artificial Intelligence (AI) for NWP and Situational Awareness Applications. Application to Remote Sensing and Data Assimilation/Fusion |

9:45 – 10:15 Session 12b: Assimilation studies (poster introductions - 1 minute: no visual aids)
Chairs: Vincent Guidard and Brett Candy

| 12p.01 | Patrik Benacek | Satellite Bias Correction in Limited-Area Model ALADIN |
| 12p.02 | James Cameron | Comparison between global model and VarBC bias corrections in a UK regional model |
| 12p.03 | Ed Pavelin | Diagnosis of residual biases in the assimilation of AMSU-A |
| 12p.04 | Kristen Bathmann | Assimilating Infrared and Microwave Sounder Observations with Correlated Errors |
| 12p.05 | Peter Weston | Accounting for correlated observation error in the assimilation of ATMS |
| 12p.06 | William F. Campbell | Posterior Channel Selection for Satellite Radiances with Correlated Observation Error in Hybrid 4DVar System (NAVGEM) |
| 12p.07 | Hyoung-Wook Chun | Buddy check for radiance with analysis error variance |
| 12p.08 | Stuart Newman | A decade of improved fits to satellite observations at the Met Office |
| 12p.09 | Olaf Stiller | Observation impact diagnostics in an Ensemble Data Assimilation System |
| 12p.10 | Steve J. English | Data Assimilation Methodology Developments at ECMWF |
| 12p.11 | Louis Garand | Toward a coupled ocean-atmosphere data assimilation system: first impact examination from the viewpoint of satellite radiances |
| 12p.12 | Reima Eresmaa | Assimilation of satellite data in a coupled ocean-atmosphere system |
| 12p.13 | Bob Tubbs | Met Office Convective-Scale Satellite Data Assimilation |

10:15 – 10:45  Break and poster viewing 12b

10:45 – 11:30 Session 13a: Sounding science and validation (oral presentations - 12 minutes)
Chairs: Sid Boukabara and Tim Hewison

<p>| 13.01 | Tony Reale | Satellite Sounding Product Characteristic Performance and Impact of Satellite Overpass Time |</p>
<table>
<thead>
<tr>
<th>Time</th>
<th>Speaker</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>13:02</td>
<td>Alexander Polyakov</td>
<td>Studies using spectral measurements of satellite atmospheric FTIR sounder IRFS-2</td>
</tr>
<tr>
<td>13:03</td>
<td>Bjorn Lambrigtsen</td>
<td>Sounding Science at the Jet Propulsion Laboratory</td>
</tr>
</tbody>
</table>

**11:30 – 11:35  Session 13b: Retrieved products and validation (poster introductions - 1 minute: no visual aids)**  
**Chairs: Sid Boukabara and Tim Hewison**

<table>
<thead>
<tr>
<th>Session 13p</th>
<th>Speaker</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>13p.01</td>
<td>Michael W. Chalfant</td>
<td>Retrieval of Cloud Properties at the Infrared Instrument FOV Using the CO2 Slicing Technique</td>
</tr>
<tr>
<td>13p.02</td>
<td>Alexander Polyakov</td>
<td>Validation of temperature sounding of the atmosphere from a board of «Meteor-M» No 2 satellite (IRFS-2 device)</td>
</tr>
<tr>
<td>13p.03</td>
<td>Sanjeev Singh</td>
<td>Identifying downburst events using INSAT-3D satellite system</td>
</tr>
</tbody>
</table>

**11:35 – 12:15  Session 14: Space agency reports (Space agency poster introductions - 5 minutes: 2 slides)**  
**Chairs: John Eyre and Alexander Uspensky**

<table>
<thead>
<tr>
<th>Session 14p</th>
<th>Speaker</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>14p.01</td>
<td>Peng Zhang (CMA)</td>
<td>Updates on CMA Meteorological Satellite Programs</td>
</tr>
<tr>
<td>14p.02</td>
<td>Dieter Klaes (EUMETSAT)</td>
<td>An update on EUMETSAT Programmes and Plans</td>
</tr>
<tr>
<td>14p.03</td>
<td>Mitch Goldberg</td>
<td>NOAA</td>
</tr>
<tr>
<td>14p.04</td>
<td>Kozo Okamoto</td>
<td>Status report of space agency: JMA and JAXA</td>
</tr>
<tr>
<td>14p.05</td>
<td>Alexander Uspensky</td>
<td>Russian Meteorological Satellite Programs</td>
</tr>
</tbody>
</table>

**12:15 – 13:30**  
**Lunch**

**13:30 – 14:00**  
**Poster viewing 13b, 14**

**14:00 – 15:30  Session 15a: Future observations (oral presentations - 12 minutes)**  
**Chairs: Dorothee Coppens and Fuzhong Weng**

<table>
<thead>
<tr>
<th>Session 15p</th>
<th>Speaker</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.01</td>
<td>Cyril Crevoisier</td>
<td>IASI-New generation: scientific objectives and foreseen validation</td>
</tr>
<tr>
<td>15.02</td>
<td>Likun Wang</td>
<td>A Study on the Benefits of Spatial Resolution for Next Generation Infrared Hyperspectral Sounder Instruments</td>
</tr>
<tr>
<td>15.03</td>
<td>Agnes Lim</td>
<td>Impact Analysis of LEO Hyperspectral Sensor IFOV size on the next generation high-resolution NWP model forecast performance</td>
</tr>
<tr>
<td>15.04</td>
<td>Will McCarty</td>
<td>An OSSE Investigating a Constellation of 4-5 μm Infrared Sounders</td>
</tr>
<tr>
<td>15.05</td>
<td>Fuzhong Weng</td>
<td>Future Opportunities of Using Microwave Data from Small Satellites</td>
</tr>
<tr>
<td>15.06</td>
<td>Ralf Bennartz</td>
<td>The TROPICS mission’s sounding capabilities</td>
</tr>
</tbody>
</table>

**15:30 – 15:50  Session 15b: Future observations (poster introductions - 1 minute: no visual aids)**  
**Chairs: Dorothee Coppens and Fuzhong Weng**

<table>
<thead>
<tr>
<th>Session 15p</th>
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<tbody>
<tr>
<td>15p.01</td>
<td>Francisco Bermudo</td>
<td>IASI-NG Program: General Status Overview</td>
</tr>
<tr>
<td>15p.02</td>
<td>Adrien Deschamps</td>
<td>Overview of the IASI-NG Level 1 Processing</td>
</tr>
<tr>
<td>15p.03</td>
<td>Flavia Lenti</td>
<td>Introduction to the IASI-NG principal components and L2 operational processor.</td>
</tr>
<tr>
<td>15p.04</td>
<td>Francesca Vittorioso</td>
<td>Preparing the assimilation of IASI-NG in NWP models: a first channel selection</td>
</tr>
<tr>
<td>15p.05</td>
<td>Cédric Goukenleuque</td>
<td>Preparing test data for the IRS Level 2 processor</td>
</tr>
<tr>
<td>15p.06</td>
<td>Zhenglong Li</td>
<td>Value-added Impact from Geostationary Hyperspectral Infrared Sounder on high impact weather forecasting – demonstration with quick regional OSSE</td>
</tr>
<tr>
<td>15p.07</td>
<td>Zhenglong Li</td>
<td>Using CIRAS and MicroMAS-2 to mitigate the data gap of CrIS and ATMS</td>
</tr>
<tr>
<td>15p.08</td>
<td>Nigel Atkinson</td>
<td>Level 1 processing for the Microwave Sounder on Metop-SG</td>
</tr>
<tr>
<td>15p.09</td>
<td>Fiona Smith</td>
<td>Evaluation of Laser Heterodyne Radiometry (LHR) for Numerical Weather Prediction Applications</td>
</tr>
</tbody>
</table>

**15:50 – 16:50**  
**Break and poster session 10b, 11b, 12b, 13b, 14, 15b**
16:50 – 17:30  Working groups finalise reports

19:00  Banquet, including
   • Presentation of prizes for best oral and poster presentations

Tuesday, 5 December 2017

9.00-10.15  Session 15: Working Group Reports (15 minutes)
   Co-chairs: Mitch Goldberg and Niels Bormann
   • RT (Marco Matricardi and Benjamin Johnson)
   • Climate (Nathalie Selbach and Cheng-Zhi Zou)
   • NWP (Andrew Collard and Fiona Smith)

10.15-10.45 BREAK

10.45-12.00  Session 15: Working Group Reports (15 minutes)
   Co-chairs: Mitch Goldberg and Niels Bormann
   • Advanced Sounders (Dieter Klaes and Bill Smith)
   • International and Future Systems (Stephen English and Stephan Bojinski (tbc))
   • Products and Software (Liam Gumley and Nigel Atkinson)

12.00-12.30  Session 16: Technical Sub-Group Reports (5 minutes)
   Co-chairs: Mitch Goldberg and Niels Bormann
   • Direct broadcast packages/DBNet (Liam Gumley and Mikael Rattenborg)
   • RTTOV (James Hocking)
   • CRTM (Benjamin Johnson)

12:30 – 13:30  Lunch