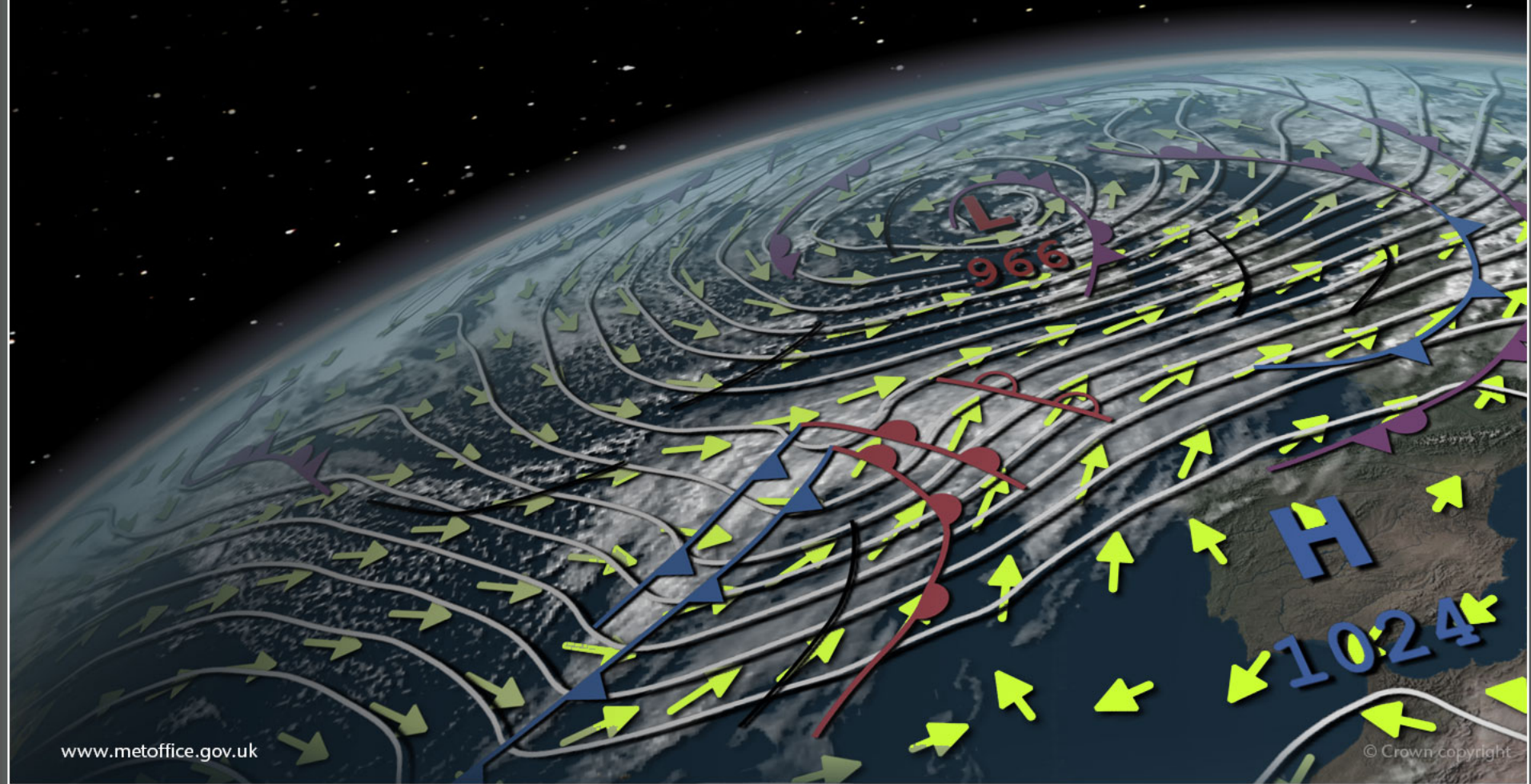


# RTTOV technical subgroup report

ITSC-XX, Lake Geneva, Wisconsin, 29 Oct – 3 Nov 2015

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# RTTOV technical subgroup

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# Topics discussed

- RTTOV user survey
- New features/updates in RTTOV v11.2 and v11.3
- Latest RTTOV coefficients
- Plans for RTTOV v12
- RTTOV website



# RTTOV user survey

[http://nwpsaf.eu/deliverables/rtm/docs\\_rttov11/rttov\\_user\\_survey\\_2014.pdf](http://nwpsaf.eu/deliverables/rtm/docs_rttov11/rttov_user_survey_2014.pdf)



# New features in v11.2

- RTTOV GUI released
- FASTEM6 – improved azimuthal dependence
- New interpolation options which eliminate artefacts in weighting functions and Jacobians
- New profile extrapolation option at top of atmosphere based on the optical depth regression limits
- Updated Baran ice optical property parameterisation for cloudy IR simulations
- Optimisation, especially for solar sea surface reflectance calculation, IR scattering code, and PC-RTTOV



# New features in v11.3

- Option to specify input gas units
  - New PC-RTTOV coefficients for all surface types
  - Lambertian surface option for IR
  - Zenith angle correction in IR emissivity atlas
  - Improved treatment of snow in BRDF atlas
  - Updates to the RTTOV GUI including new 1DVar functionality
  - Python/C++ interface
- 
- All v7/v8 predictor coefficients regenerated

[http://nwpsaf.eu/deliverables/rtm/docs\\_rttov11/rttov\\_v11.3\\_gas\\_units\\_and\\_new\\_coefs.pdf](http://nwpsaf.eu/deliverables/rtm/docs_rttov11/rttov_v11.3_gas_units_and_new_coefs.pdf)



# Plans for RTTOV v12

- Accurate visible/near-IR scattering simulations.
- SO<sub>2</sub> as new variable trace gas.
- Updated IR sea surface emissivity model.
- Extend Python/C++ interface to RTTOV-SCATT and PC-RTTOV.
- Option to call HT-FRTC (PC-based fast RT model) through RTTOV.

See full list of current plans here:

**[http://nwpsaf.eu/deliverables/rtm/rttov\\_plans.html](http://nwpsaf.eu/deliverables/rtm/rttov_plans.html)**

- Due for release December 2016.
- Beta-testers will be required next August/September.



# RTTOV website

SRF/pass-band data

[http://nwpsaf.eu/downloads/rtcoef\\_rttov11/srf\\_list.html](http://nwpsaf.eu/downloads/rtcoef_rttov11/srf_list.html)

Comparisons of LBL vs RTTOV

[http://nwpsaf.eu/downloads/rtcoef\\_rttov11/lbl\\_comp\\_list.html](http://nwpsaf.eu/downloads/rtcoef_rttov11/lbl_comp_list.html)

History log for coefficient file changes

[http://nwpsaf.eu/deliverables/rtm/rttov11\\_coefficients\\_history.html](http://nwpsaf.eu/deliverables/rtm/rttov11_coefficients_history.html)





# Website refresh

NWP SAF website is being re-designed:

- New site will launch later this year
- Register once and subscribe to multiple software packages
- Provides access to historical versions (NB only recent versions are actively supported)

Feedback is welcome on current version of RTTOV and on development plans:

- NWP SAF helpdesk: <http://nwpsaf.eu/feedback.html>
- Forum: <http://www.nwpsaf.eu/forum/>



# Questions from the subgroup

- Wei Han – show the actual data from LBL vs RTTOV simulations to give an idea of the error distribution
- Louis Garand – simpler scheme for specifying cloud liquid water in IR cloudy simulations