The CRTM Technical Sub-Group has been initiated at Lotte Jeju Hotel on March 27, 2014.

The first CRTM TSG meeting was held at Lotte Jeju Hotel on March 27, 2014.

CRTM Components and Functionalities.

- Community Line-by-line Model (CLBL)
- Community Surface Emissivity Model (CSEM)

Future Development
CRTM 2.1.3 was released on Jan. 14, 2014 and can be downloaded from ftp.emc.ncep.noaa.gov.

- ODAS and ODPS transmittance models
- Aerosol optical property functions
- Cloud optical property functions
- Versatile surface emissivity/reflectance models: Fastem5, Wu and Smith IR, Ocean BRDF, empirical and physical models, database, LUT
- ADA and SOI radiative transfer algorithms
- Option structure I/O
- Non-LTE for hyperspectral infrared sensors
- Zeeman-splitting
- Stratosphere Sounder Unit
- Channel subsetting
- Number of streams option for scattering atmospheres
- Scattering switch option for clouds and aerosols
- Aircraft instrument capability
- Overcast radiance array

Contact the CRTM team at ncep.list.emc.jcdda_crtm.support@noaa.gov
Future Development

• Full Stokes RT
• Community Surface Emissivity Model (CSEM)
  + Land bidirectional Reflectance Distribution Function
  + Ocean bio-optic model
• Finalize the un-apodized radiance simulation capability
• Multiple Aerosol Optical Models
• Optimize CRTM efficiency
• Active Sensor simulators
• CLBL
Polarization effect on ocean-color product

\[ I_m = M R(\alpha) I_t \]

\[ I_m = I_t + m_{12} (Q_t \cos 2\alpha + U_t \sin 2\alpha) + m_{13} (-Q_t \sin 2\alpha + U_t \cos 2\alpha) \]

\[ m_{12} = P_{in} \cos 2\chi_{in}, \quad m_{13} = P_{in} \sin 2\chi_{in} \]

Water-leaving radiance for high (dotted) and low (lower solid) chlorophyll. Upper curves are with atmospheric signal. Online downloaded figure.