

Radiative Transfer Algorithm Updates

AIRS Virtual Science Team Meeting

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Summary

- What is the Stand-alone radiative transfer algorithm (SARTA)
- Who uses SARTA.
- Current SARTA build status.
- Plans.

The SARTA

- The Stand-alone radiative transfer algorithm (SARTA) is constructed using kCARTA
- Therefore SARTA has the same spectroscopy as kCARTA.
- SARTA was developed 18 years ago for the AIRS.
- It uses sets of coefficients that parameterize atmospheric transmittances derived using a set of training profiles.
- Is written in Fortran
- Permits very fast computation of radiances for predefined spectral response functions.
- Has a version for clear sky radiance calculations and for cloudy radiances.

Who uses SARTA

- SARTA is used to compute clear and all-sky radiances for any and all FoVs from AIRS, CrIS and IASI missions.
- Is fast enough to make whole-mission modelling easily manageable.
- Currently used in ASL for the RTP production for analysis of sensor performance and global studies and geophysical retrieval.
- Is used in the AIRS geophysical product retrieval.
- Is used in NUCAPS.

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