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Setting priorities for BBHRP

IDENTIFYING CASES TO FOCUS FUTURE DEVELOPMENT OF RIPBE/BBHRP

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RIPBE & BBHRP overview:

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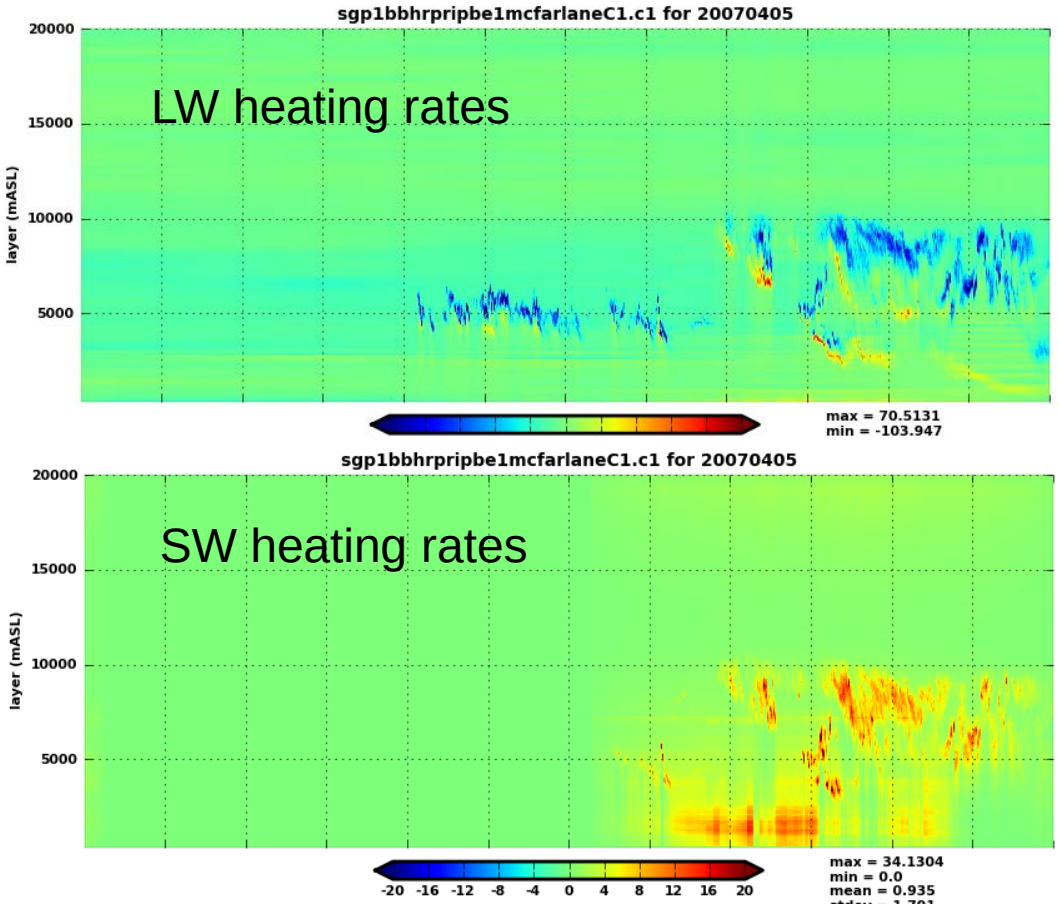
Broadband Heating Rate Profile (BBHRP) VAP



Calculates:

- LW & SW heating rates
- LW & SW fluxes

Details:

- 1 min & 30 min average files
- Height resolution determined by cloud data, (microbase uses 45 m)
- Uses RRTM radiative transfer model
- Uses RIPBE files as input but can also be run with user input files in a RIPBE like format (e.g. ACRED retrievals)

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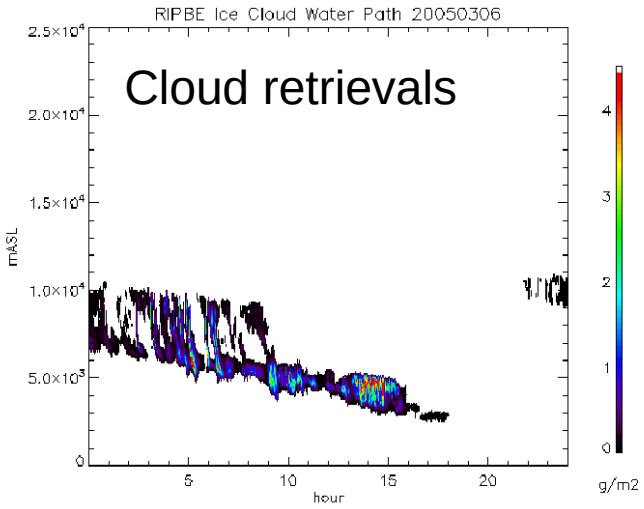
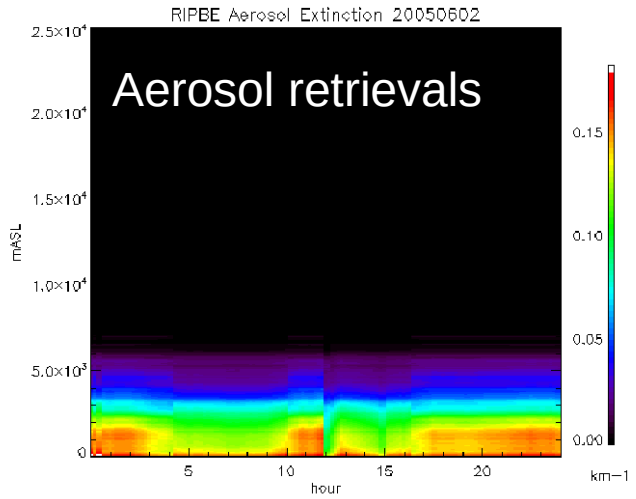
Radiatively Important Parameters Best Estimate (RIPBE)

Puts needed inputs for radiative transfer calculations onto common grid





RIPBE Inputs:

Cloud retrievals: microbase
- LWC, IWC, LiqRe, IceRe

Aerosol inputs: ABE
- Extinction, single scattering, asymmetry

Thermodynamic profiles: mergedsonde

Surface Albedo: surfspecalb

Trace gasses: tracegasship & getcoms

Surface Temperature: irt10m

Surface Fluxes: qcrad

Clear Sky identification: swfanal

RIPBE/BBHRP future priorities discussion

To be more useful within the new structure of ASR science, we envision future development of RIPBE and BBHRP to be driven by specific user needs.

- Current examples:
  - ACRED retrieval datasets from QUICR focus group
  - MC3E field campaign
- Brainstorm list of possible future uses:
  - A tool for cloud and aerosol best estimates
    - Aerosol radiative impacts
  - Using RIPBE as a comparison dataset for model radiative transfer
  - Specific case studies, i.e. radiative impacts of arctic retrievals