PATMOS-x High Level Flowchart for the main executable **clavrxorb**

Read in user-defined options

- Begin
- Access Modules
- Declare local variables
- Read and quality check user defined options from command line or OPTIONSLIST
- Open high spatial resolution ancillary data files
- Read file directories in FILELIST

Begin loop through AVHRR orbits listed in FILELIST

Retrieve ancillary data required for calibration and RTM calculations

- Read level-1b name from FILELIST
- Prepare to read level-1b: determine if file exists, what type it is and create pixel arrays
- Read AVHRR header
- Read AVHRR sensor constant files
- Open sensor specific ancillary data
- Open non-static high resolution ancillary data
- Read in NW data (GFS or NCEP Reanalysis)
- Populate or Read other lookup tables
- Interpolate clock error for this orbit

Begin loop over orbit segments

Read in sensor data and perform RTM calculations

- Read AVHRR level-1b data
- On first segment, define output files
- Recompute geolocation
- Compute some fundamental pixel-level arrays
- Interpolate ancillary data to each pixel in this segment
- Compute nwpmapping and rtm values for each pixel in segment

Cloud algorithms

- Spatial metrics processing
- Generate pixel-level products
  - ACHA Algorithm – Cloud Temperature and Cloud Emissivity
  - DCOMP Algorithm- Cloud Optical Thickness and Cloud Particle Size

Write to output files and deallocate resources

- Write to output files (pixel-level)
- RTM Structure Memory Deallocation
- **End of loop over orbital segments**
- Close output pixel-level files
- Close non-static ancillary data files
- Deallocate remaining arrays
- **End loop over files**
- Close FILELIST
- Close static ancillary data files
- Final remaining memory deallocation
- End of code