This work is supported by SSEC 2022 fund

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Introduction

https://cimss.ssec.wisc.edu/imapp/

From 2000 to 2017 the International MODIS/AIRS Processing Package (IMAPP) successfully provided global receiving stations the ability to support environmental observations for decision makers using Aqua and Terra MODIS, AIRS, AMSU, and S-NPP VIIRS and CrIS instruments. In 2020 SSEC allocated internal funding to rehabilitate and enhance IMAPP through prioritizing software upgrades based upon their utility and on the effort required to update them. One of those packages was IDEA-I, an open source, portable, international version of infusing satellite Data into Environmental air quality Applications (IDEA). In our new IDEA-I implementation:

The deployment is in a container, so the only system requirement is Singularity. With a web server, you can display and easily control animated IDEA-I products.

Description

IDEA-I is a real-time system for trajectory-based forecasts of atmospheric transport of air parcels identified in Level-2 products from polar orbiting satellites. Specifically these are air parcels anomalously high in aerosol, carbon monoxide or ozone whose predicted trajectories may have them remain near, or descend down to, the Earth’s surface. We have updated IDEA-I to support MODIS and VIIRS aerosol optical depth products, ozone retrievals from HSRTV (UW Hyperspectral Retrieval Package) and carbon monoxide retrievals from HEAP (Hyper-Spectral Enterprise Algorithm Package), each driven by GFS winds for global applicability. Improved HTML5 web delivery has been achieved by leveraging HAniS, a modern browsers.” We have leveraged this technology for IDEA-I.

Summary and release information

IDEA-I has been ported to a new language system (from Perl to R; the trajectory execution shown as a crontab excerpt above. A late release will provide a simple top-level R dashboard-style web interface. Graphics for animations have been coded entirely in JavaScript and uses the HTML5 standards so is usable on multiple platforms with modern browsers.”

IDEAI_HOME=/data/jimd/IDEA-I
## IDEA-I
IDEAI_HANISURL=https://aeras.ssec.wisc.edu/IDEA-I
CRONLOG=/home/jimd/cronlogs
# Location for logs
SHELL=/bin/bash
# Specify the shell

### Ascending node  :  terra
30 02 * * * $IDEAI_HOME/scripts/run_IDEA-I.bash -s aqua -i aod/mod04 -g conus  -ACFGXVW -d $(date --date="yesterday" +\%Y\-%m\-%d) > $CRONLOG/IDEA-I_$(date +\%a_h\%Hm\%M).log 2>&1

### Ascending node  :  aqua
15 02 * * * $IDEAI_HOME/scripts/run_IDEA-I.bash -s aqua -i o3/hsrtv  -g westus -ACFGXVW -d $(date --date="yesterday" +\%Y\-%m\-%d) > $CRONLOG/IDEA-I_$(date +\%a_h\%Hm\%M).log 2>&1

### Descending node :  aqua
55 10 * * * $IDEAI_HOME/scripts/run_IDEA-I.bash -s j01 -i aod/jrr   -g beijing -ACFGXVW -d $(date --date="today" +\%Y\-%m\-%d)     > $CRONLOG/IDEA-I_$(date +\%a_h\%Hm\%M).log 2>&1

### Ascending node  :  j01
25 03 * * * $IDEAI_HOME/scripts/run_IDEA-I.bash -s j01 -i co/nucaps -g conus   -ACFGXVW -d $(date --date="yesterday" +\%Y\-%m\-%d) > $CRONLOG/IDEA-I_$(date +\%a_h\%Hm\%M).log 2>&1

### Ascending node  :  j01
25 16 * * * $IDEAI_HOME/scripts/run_IDEA-I.bash -s j01 -i co/nucaps -g conus  -DCFGXVW  -d $(date --date="today" +\%Y\-%m\-%d)     > $CRONLOG/IDEA-I_$(date +\%a_h\%Hm\%M).log 2>&1

### Ascending node  :  j01
15 16 * * * $IDEAI_HOME/scripts/run_IDEA-I.bash -s j01 -i o3/hsrtv  -g westus -DCFGXVW  -d $(date --date="today" +\%Y\-%m\-%d)     > $CRONLOG/IDEA-I_$(date +\%a_h\%Hm\%M).log 2>&1

## Ascending node  :  terra
15 19 * * * $IDEAI_HOME/scripts/run_IDEA-I.bash -s aqua -i o3/hsrtv -g westus  -DCFGXVW -d $(date --date="today" +\%Y\-%m\-%d)     > $CRONLOG/IDEA-I_$(date +\%a_h\%Hm\%M).log 2>&1

## Descending node :  aqua
25 03 * * * $IDEAI_HOME/scripts/run_IDEA-I.bash -s j01 -i aod/jrr   -g beijing -ACFGXVW -d $(date --date="today" +\%Y\-%m\-%d)     > $CRONLOG/IDEA-I_$(date +\%a_h\%Hm\%M).log 2>&1

## Ascending node  :  j01
15 16 * * * $IDEAI_HOME/scripts/run_IDEA-I.bash -s j01 -i o3/hsrtv  -g westus -ACFGXVW -d $(date --date="yesterday" +\%Y\-%m\-%d) > $CRONLOG/IDEA-I_$(date +\%a_h\%Hm\%M).log 2>&1

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