METplus Track and Intensity Overview

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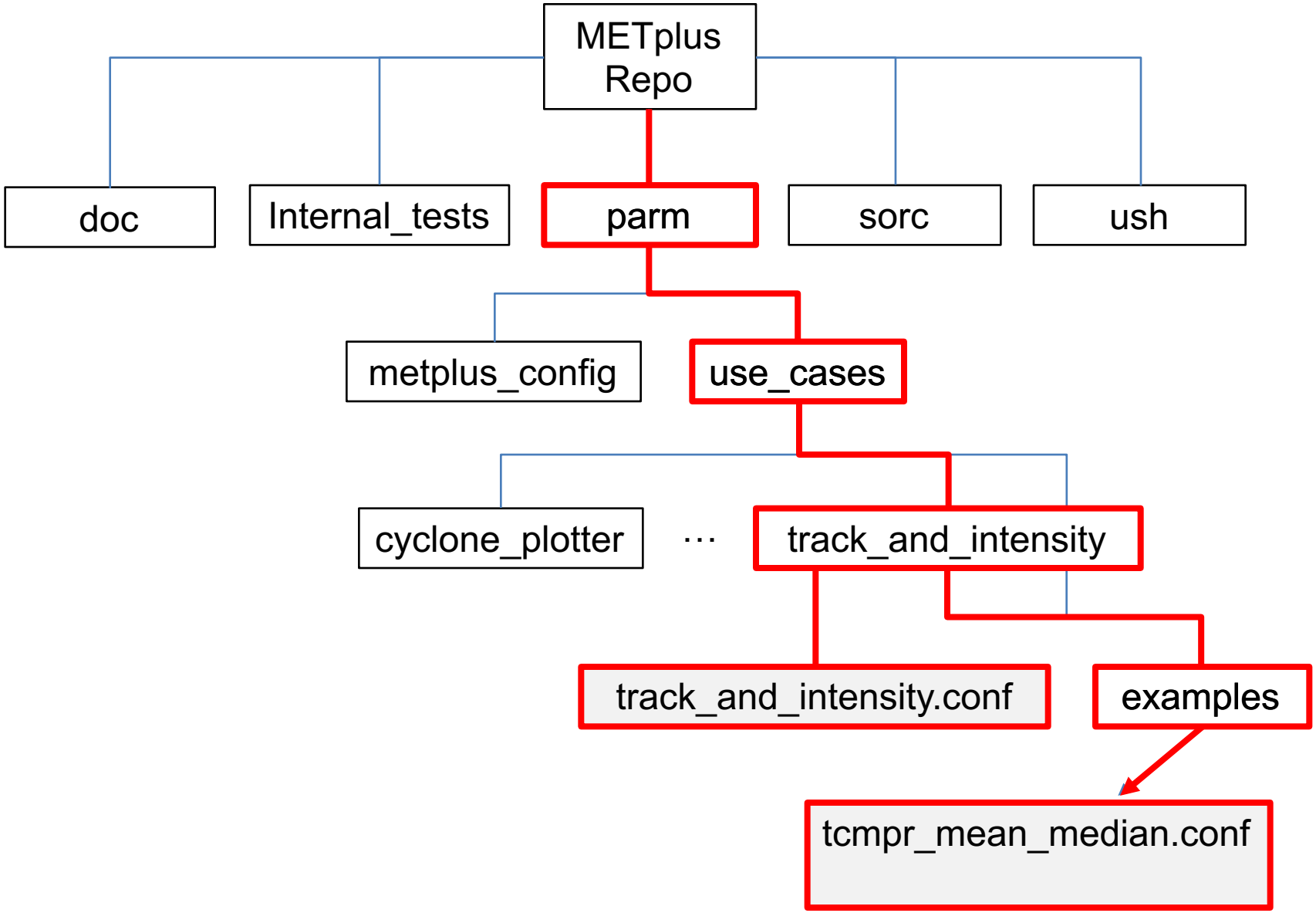
Background

In the track and intensity use case, we are comparing two non-ATCF tropical cyclone track data. We will use the GFS data provided to us by Stony Brook University (SBU)

Tools

The track and intensity use case employs the MET tc-pairs tool and the plot_tcmpr.R script to generate the statistics plots.


METplus
Repo
doc
Internal_tests
parm
sorc
ush
metplus_config
use_cases
cyclone_plotter
…
track_and_intensity
track_and_intensity.conf
examples
tcmpr_mean_median.conf

Configuring METplus for Use Case

Verify that PYTHONPATH and PATH are set correctly:

csh:

```
setenv PYTHONPATH ~/METplus/ush:~/METplus/parm :$PYTHONPATH

setenv PATH ~/METplus/ush:$PATH
```

bash:

```
export PYTHONPATH=”~/METplus/ush:~/METplus/parm:$PYTHONPATH”

export PATH=“~/METplus/ush:$PATH”
```

Configuring METplus for Use Case cont'd

1. Create your own configure file

2. Set all necessary directory paths under the [dir] header:

   OUTPUT_BASE – Where you want output to be saved
   ADECK_TRACK_DATA_DIR - where ADeck tropical cyclone input data is located
   BDECK_TRACK_DATA_DIR – where BDeck tropical cyclone input data is located

3. Indicate which wrappers to run under the [config] header:
   PROCESS_LIST=TcPairs, TCMPRPlotter

Configuring METplus for Use Case cont'd

Let's look at how we handle the plotting portion of this use case

parm/use_cases/track_and_intensity/examples/tcmpr_mean_median.conf

we will generate the TK_ERR boxplot, and the mean and median plots for AMSLP-BMSLP and AMAX_WIND-BMAX_WIND:

```
#  Plot_TCMPR options, if left unset, default values that are
#  pre-defined in the R utility (packaged with MET) will be used.
CONFIG_FILE =
{METPLUS_BASE}/parm/use_cases/track_and_intensity/tcmpr_customize.conf
PREFIX =
TITLE = TEST THIS TITLE
SUBTITLE = Your subtitle goes here
XLAB =
YLAB = Your y-label goes here
XLIM =
YLIM =
FILTER =
FILTERED_TCST_DATA_FILE =

# Comma-separated, no whitespace.
# Intensities for minimum SLP and max wind and track error
DEP_VARS = AMSLP-BMSLP,AMAX_WIND-BMAX_WIND,TK_ERR
SCATTER_X =
```

Configuring METplus for Use Case cont'd

Special note about the CONFIG_FILE variable

CONFIG_FILE is a variable that defines an additional config file used by the MET tool, plot_tcmpr.R

Define/customize plot attributes such as image resolution

This is optional, if undefined all defaults established in plot_tcmpr.R are employed

We set img_res = 72 to reduce the size of the .png plot to fit in our display

You can also set any other plot_tcmpr.R variables in this additional config file, which will over-ride any variables defined in the tcmp_mean_median.conf

Running the use case with METplus

To generate the TK_ERR plot, and the mean and median plots of the AMSLP-BMSLP and AMAX_WIND – BMAX_WIND

Run the following at the command line:

```
master_metplus.py
    -c parm/use_cases/track_and_intensity/track_and_intensity.conf  \
    -c  parm/use_cases/track_and_intensity/examples/tcmpr_mean_median.conf \
    -c <your conf file dir>/<your_track_and_intensity.conf>
```

Post-run overview: logging

Look in the log file* for any ERROR messages

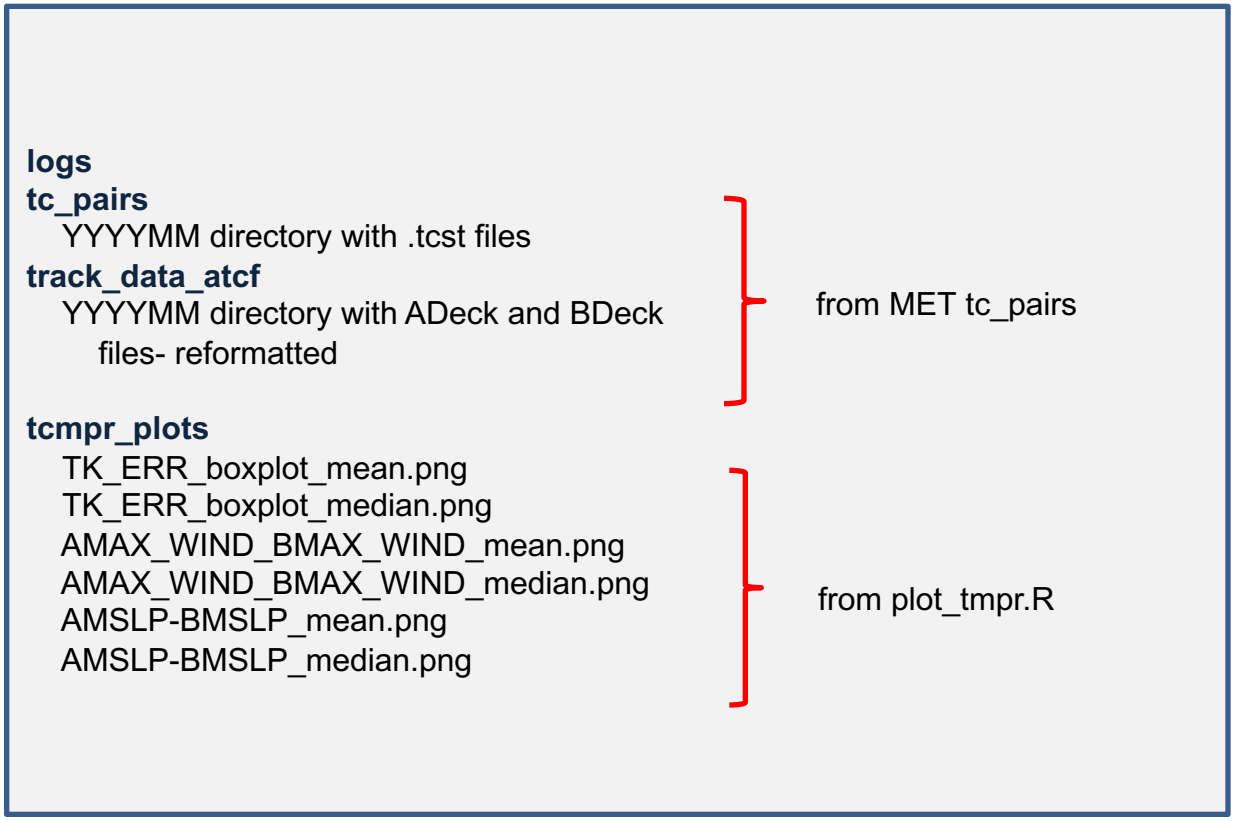
Look at the end of the log for any ”completion” messages

```
09/26 18:22:22.187 metplus.TCMPRPlotter (tcmpr_plotter_wrapper.py:291) DEBUG: DEBUG: Creating dated output dir
/d1/jfrimel/pytmp_dev2.0/pytmp.track_and_intensity/tcmpr_plots
09/26 18:22:23.992 metplus.TCMPRPlotter (tcmpr_plotter_wrapper.py:348) INFO: INFO: Plotting complete
~
```

located at the directory where you directed output, in the logs directory

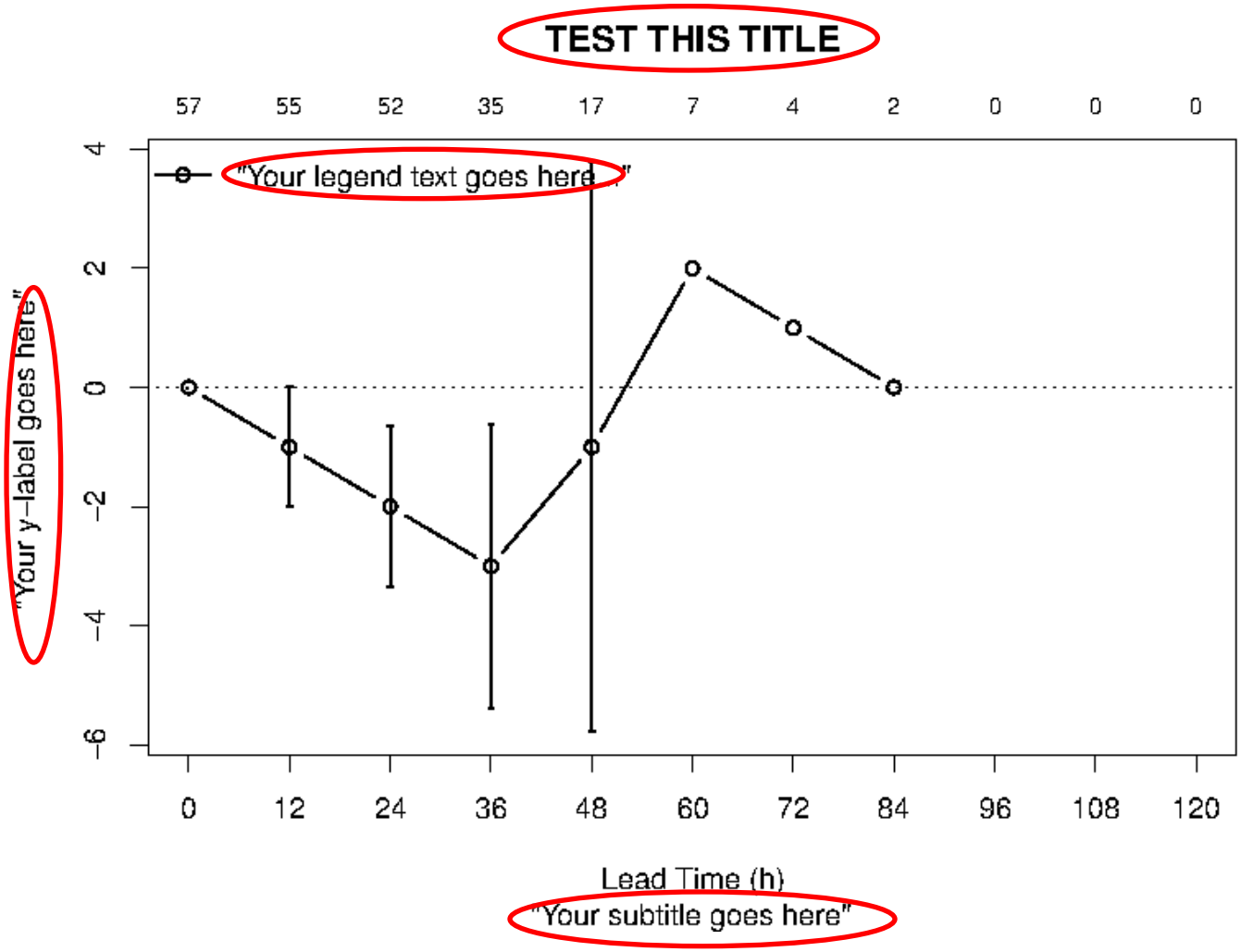
Post-run overview: output

In the output directory*, the following directories and files have been created:



*as specified by OUTPUT_BASE in your config file

Post-run overview: output



Questions