METplus Version 2.0.1

Automation for the Model Evaluation Tools

Developmental Testbed Center
Boulder, Colorado

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Foreword: A note to METplus users

This User's Guide is provided as an aid to users of the Model Evaluation Tools (MET) and it's companion package METplus. MET is a set of verification tools developed and supported to community via the Developmental Testbed Center (DTC) for use by the numerical weather prediction community. METplus is intended to be a suite of Python wrappers and ancillary scripts to enhance the user's ability to quickly set-up and run MET. Over the next few years, METplus will become the authoritative repository for verification of the Unified Forecast System.

It is important to note here that METplus is an evolving software package. Previous releases of METplus have occurred since 2017. This documentation describes the 2.0 release in September 2018. Intermediate releases may include bug fixes. METplus is also be able to accept new modules contributed by the community. If you have code you would like to contribute, we will gladly consider your contribution. While we are setting up our community contribution protocol, please send email to: met_help@ucar.edu and inform us of your desired contribution. We will then determine the maturity of new verification method and coordinate the inclusion of the new module in a future version.

This User's Guide was prepared by the developers of the METplus, including Dan Adriaansen, Minna Win-Gildenmeister, Julie Prestopnik, Jim Frimel, Mallory Row, John Halley Gotway, George McCabe, Paul Prestopnik, Christana Kalb, Hank Fisher, Jonathan Vigh, Lisa Goodrich, Tara Jensen, Tatiana Burek,and Bonny Strong.

New for METplus v2.0

METplus v2.0 includes some new wrappers:

- pb2nc_wrapper
  - Python wrapper to the MET tool pb2nc
- point_stat_wrapper
  - Python wrapper to the MET tool point_stat

Enhancements, refactorization, and bug fixes have been addressed in the following wrappers:

- tc_stat_wrapper

  - can now be run stand-alone

- tc_pairs_wrapper

  - can now read ATCF input file formats
  - support for numerous input file naming conventions
  - support for input data organized into one directory or subdirectories with date information in the name

- cyclone_plotter_wrapper

  - replaced the dependency on Basemap toolkits (which are unstable on some platforms) with Cartopy for map rendering

- tcmpr_plotter_wrapper

  - now supports whitespace in plot title, sub-title, and legend

METplus v2.0.1 Release Notes:

Minor release including bug fixes.

- METplus configuration variable changes

  - OBS_WINDOW_BEG in point_stat_wrapper, grid_to_obs.conf changed to OBS_WINDOW_BEGIN

- Fixed pcp_combine_wrapper related to:

  - selecting accumulation files.
  - sum method and file template matching.

- Fixed Typo in variable name in getraw_interp function.

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The citation for this User's Guide should be:

Adriaansen, D., M. Win-Gildenmeister, J. Frimel, J. Prestopnik, J. Halley Gotway,
T. Jensen, J. Vigh, C. Kalb, G. McCabe, and H. Fisher, 2018:
The METplus Version 2.0 User's Guide. Developmental Testbed Center.
Available at: https://github.com/NCAR/METplus/releases. 85 pp.

Acknowledgments

Chapter 1

Overview of METplus

1.1 Purpose and organization of the User's Guide

The goal of this User's Guide is to equip users with the information needed to use the Model Evaluation Tools (MET) and it's companion package METplus. MET is a set of verification tools developed and supported to community via the Developmental Testbed Center (DTC) for use by the numerical weather prediction community. METplus is a suite of Python wrappers and ancillary scripts to enhance the user's ability to quickly set-up and run MET. Over the next few years, METplus will become the authoritative repository for verification of the Unified Forecast System.

The METplus User's Guide is organized as follows. Chapter 1 provides an overview of METplus. Chapter 2 contains basic information about how to get started with METplus - including system requirements, required software , and how to download METplus. Chapter 3

1.2 The Developmental Testbed Center (DTC)

METplus has been developed, and will be maintained and enhanced, by the Developmental Testbed Center (DTC; `http://www.dtcenter.org/`). The main goal of the DTC is to serve as a bridge between operations and research, to facilitate the activities of these two important components of the numerical weather prediction (NWP) community. The DTC provides an environment that is functionally equivalent to the operational environment in which the research community can test model enhancements; the operational community benefits from DTC testing and evaluation of models before new models are implemented operationally. METplus serves both the research and operational communities in this way - offering capabilities for researchers to test their own enhancements to models and providing a capability for the DTC to evaluate the strengths and weaknesses of advances in NWP prior to operational implementation.

METplus will also be available to DTC visitors and to the WRF modeling community for testing and evaluation of new model capabilities, applications in new environments, and so on. The METplus release

schedule is coincident with the MET release schedule and the METplus major release number is six less than the MET major release number (e.g. MET 8.0 is released with METplus 2.0).

1.3   METplus goals and design philosophy

METplus is a Python scripting infrastructure for the MET tools. The primary goal of METplus development is to provide MET users with a highly configurable and simple means to perform model verification using the MET tools. Prior to the availability of METplus, users who had more complex verifications that required the use of more than one MET tool were faced with setting up multiple MET config files and creating some automation scripts to perform the verification. METplus provides the user with the infrastructure to modularly create the necessary steps to perform such verifications.

METplus has been designed to be modular and adaptable. This is accomplished through wrapping the MET tools with Python and the use of hierarchical configuration files to enable users to readily customize their verification environments. Wrappers can be run individually, or as a group of wrappers that represent a sequence of MET processes. New wrappers can readily be added to the METplus package due to this modular design. Currently, METplus can easily be applied by any user on their own computer platform that supports Python 2.7.

The METplus code and documentation is maintained by the DTC in Boulder, Colorado. METplus is freely available to the modeling, verification, and operational communities, including universities, governments, the private sector, and operational modeling and prediction centers through a publicly accessible GitHub repository. Users simply need access to a web browser to download the source code and any other relevant documentation and data samples.

1.4   METplus components

The major components of METplus package are METplus Python wrappers to the MET tools, MET configuration files and a hierarchy of METplus configuration files. Some Python wrappers do not correspond to a particular MET tool, but wrap utilities to extend METplus functionality.

1.5   Future development plans

METplus is an evolving application. New capabilities are planned in controlled, successive version releases that are synchronized with MET releases. Bug fixes and user-identified problems will be addressed as they are found and posted to the known issues section of the METplus Users web page (`www.dtcenter.org/met/users/support`). Future METplus development plans are based on several contributing factors, including the needs of both the operational and research community. Issues that are in the development queue detailed in the "Issues" section of the GitHub repository. Please send questions to `met_help@ucar.edu`.

1.6   Code support

METplus support is provided through a MET-help e-mail address: met_help@ucar.edu. We will endeavor to respond to requests for help in a timely fashion. In addition, information about METplus and tools that can be used with MET are provided on the MET Users web page (`http://www.dtcenter.org/met/users/`).

We welcome comments and suggestions for improvements to METplus, especially information regarding errors. Comments may be submitted using the MET Feedback form available on the MET website. In addition, comments on this document would be greatly appreciated. While we cannot promise to incorporate all suggested changes, we will certainly take all suggestions into consideration.

METplus is a "living" set of wrappers and configuration files. Our goal is to continually enhance it and add to its capabilities. Because our time, resources, and talents are limited, we welcome contributed code for future versions of METplus. These contributions may represent new use cases or new plotting functions. For more information on contributing code to METplus, please contact `met_help@ucar.edu`.

Chapter 2

Software Installation/Getting Started

2.1 Introduction

This chapter describes how to download and set up METplus. METplus has been developed and tested on the Debian Linux operating system.

2.2 Supported architectures

METplus was developed on Debian Linux and is supported on this platform.

2.3 Programming/scripting languages

METplus is written in Python 2.7. METplus is intended to be a tool for the modeling community to use and adapt. As users make upgrades and improvements to the tools, they are encouraged to offer those upgrades to the broader community by offering feedback to the developers or coordinating for a GitHub pull. For more information on contributing code to METplus, please contact `met_help@ucar.edu`.

2.4 Pre-requisites

The following software is required to run METplus:

- Python 2.7

- R version 3.2.5 [1]

- nco (netCDF operators)

- MET version 6.1 or above

- Basic familiarity with MET

- GitHub account (if you plan on contributing code to METplus)

2.5   METplus directory structure

Once you have cloned the METplus from the GitHub repository at https://github.com/NCAR/METplus to a location on your host, change directories to the METplus directory. You should have the following directory structure:

```
METplus

    doc
    internal_tests
    parm
    sorc
    ush
    README.md
```

The top-level METplus directory consists of a README.md file and several subdirectories.

The doc/ directory contains documentation for users (PDF) and Doxygen files that are used to create the developer documentaton. The Doxygen documentation can be created and viewed via web browser if the developer has Doxygen installed on the host.

The internal_tests/ directory contains unit test scripts that are only relevant to METplus developers and contributors.

The parm/ directory contains all the configuration files for MET and METplus.

The sorc/ directory contains Doxygen executables to generate documentation for developers.

The src/ directory contains the source code for each of the wrappers in METplus.

The ush/ directory contains the Python wrappers to the MET tools.

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[1]R version 3.2.5 is required when the tcmpr_plotter_wrapper.py wraps the plot_tcmpr.R script. Please refer to Chapter 21 Plotting and Graphics Support for more information about plot_tcmpr.R.

2.6 Getting the METplus source code

The METplus source code is available for download from a public GitHub repository. You can retrieve the source code through your web browser or the command line.

2.6.1 Get the source code via your Web Browser

2.6.1.1 Source code only:

If you wish to retrieve only the source code, then the following steps will illustrate how to quickly access the METplus source code and relevant documentation:

- On your local host (or wherever you wish to install the METplus code) create a directory where you want the code to reside

- Open the browser of your choice and navigate to https://github.com/NCAR/METplus. You will see something like the following:

- You should be directed to the 'master' branch, verify this by looking at the button labelled 'Branch' in the upper left corner of your window, directly beneath the solid blue horizontal line.

- Click on the green "Clone or download" button near the top right of the page.

- A box appears with "Clone with HTTPS" label

- Click on the blue text: "Download Zip" :
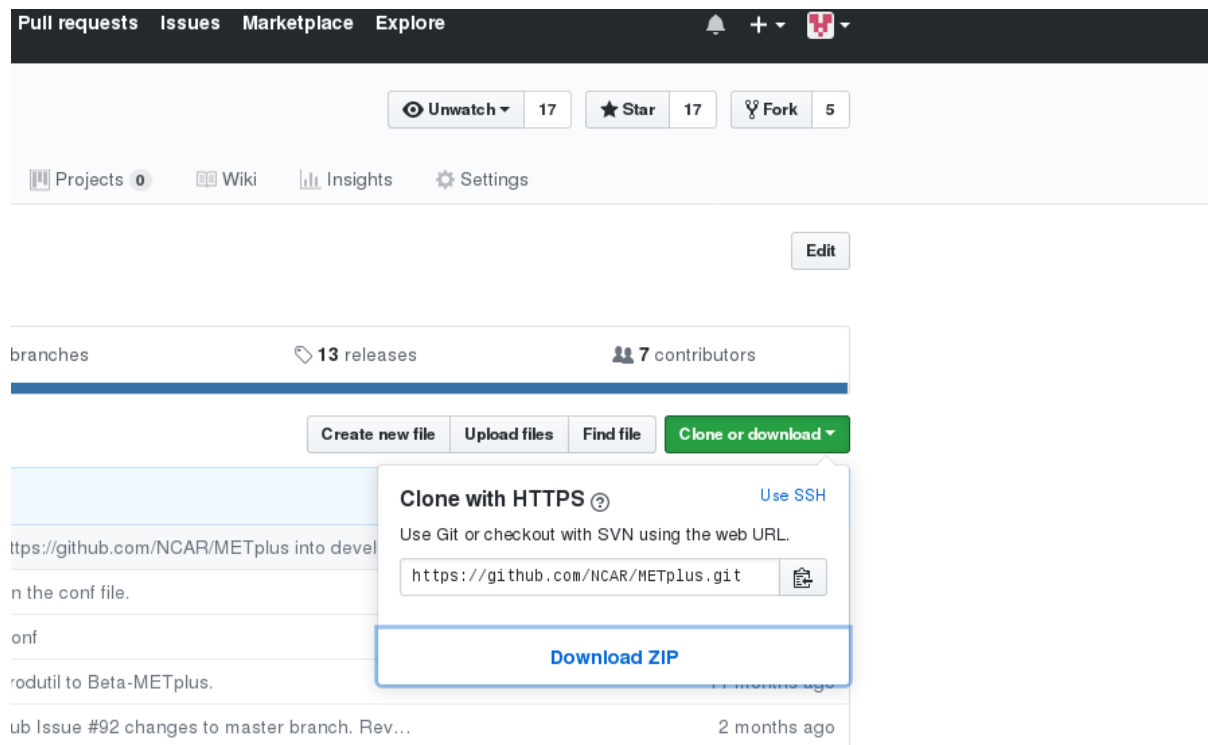
- Your browser should prompt you on what to do with this file. Save it to the directory you created above

- cd to the directory where you saved the code. You should see the file METplus-master.zip

- Uncompress the file:

  - Linux/Unix:

  - unzip METplus-master.zip

  - You should now have a METplus-master directory

    * If you downloaded the code via the command line, you will get a METplus directory rather than METplus-master.

    * GitHub appends the '-master' to the name to emphasize that is is from the master branch

    * To avoid clutter and confusion, you can now remove the METplus-master.zip (optional)

2.6.1.2   Source code, additional documentation, and sample data

If you are a new METplus user and would like to experiment with the use cases, you will want to follow
these instructions to retrieve the source code, additional documentation and sample data that accompanies
the use cases:

- On your local host (or wherever you wish to install the METplus code) create a directory where you
  want the code to reside

- Open the browser of your choice and navigate to https://github.com/NCAR/METplus. You will see
  something like the following:

- Click on the 'releases' link, highlighted by a red circle in the diagram below:
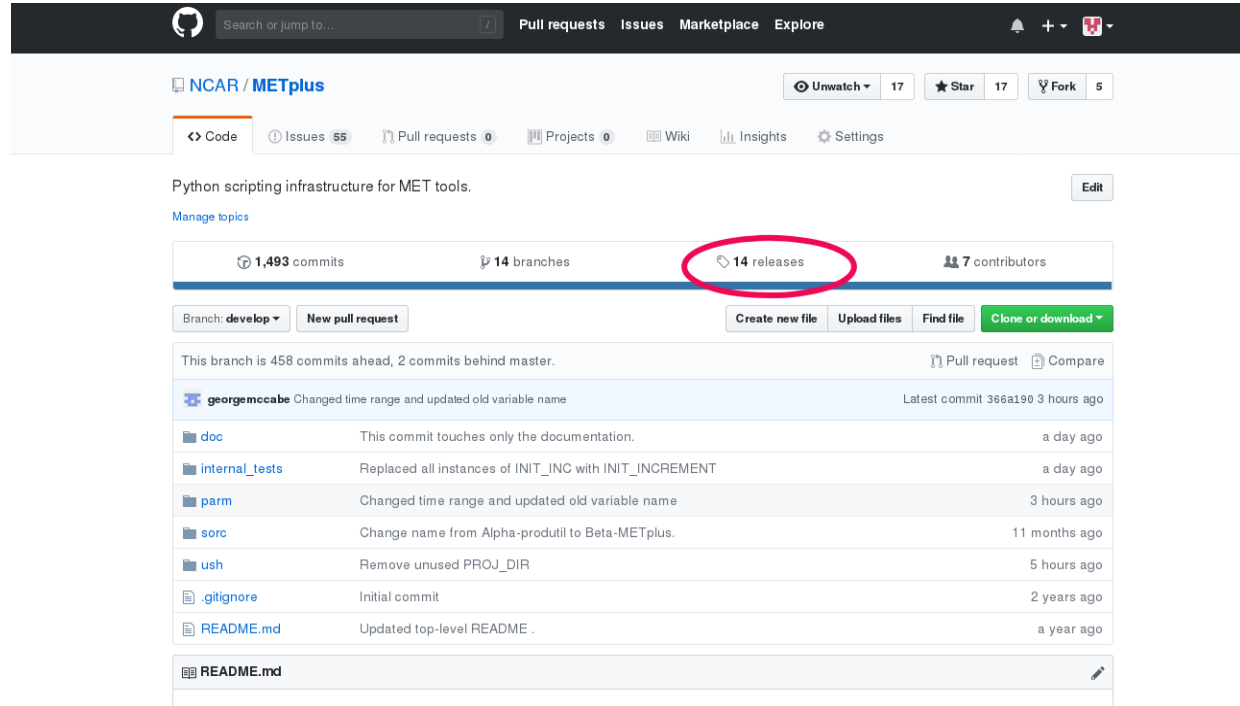
- You will be redirected to another screen. The latest available release appears at the top of the screen:
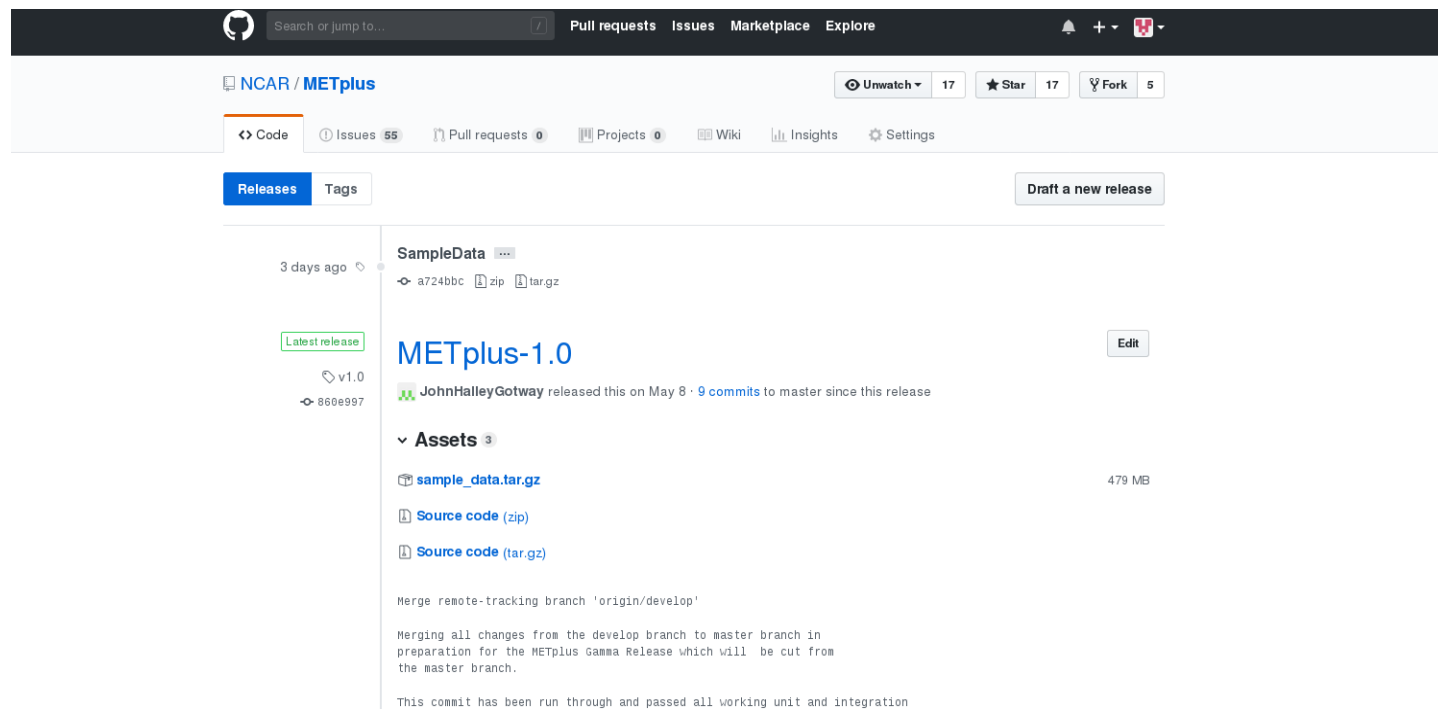
- Click on the 'Source code' link (either the *zip* or *tar.gz*) and when prompted, save it to the directory you created.

- Uncompress the source code (on Linux/Unix: *gunzip* for zip file or *tar xvfz* for the tar.gz file)

- Create a directory for the sample data directory

- Click on the *sample_data.tar.gz* link and when prompted, save the file to the directory you created above

2.6.2 Get the source code via Command line

- On your local host (or wherever you wish to install the METplus code) create a directory where you want the code to reside

- cd to the directory you just created.

- On the command line, enter the following:

  - *git clone https://github.com/NCAR/METplus*
  - The source code should appear under the METplus directory

- To update your copy, cd to your METplus install directory: */path/to/*METplus and enter *git pull* at the command line

2.7 Set up your environment

Environment variables need to be set to allow the METplus application to be run from any directory and for locating the necessary Python modules. There is an option to set the JLOGFILE environment variable, which indicates where JLOGS will be saved. JLOGS provide information pertinent to the configuration-file framework. If this environment is unset, then output from the configuration framework will be directed to stdout (your display).

Add the following information to your .cshrc (C shell) or .bashrc (Bash shell):

.cshrc:

- Open your .cshrc file and do the following:

- To your PATH, add: *full-path-to-METplus*/ush

- To your PYTHONPATH, add: *full-path-to-METplus*/ush:*full-path-to-METplus*/parm

- Optional: add JLOGFILE variable and set to *full-path-to-save-jlog-files*

- Close your .cshrc file and run `source ~/.cshrc`

- | *e.g.*
  set path = (other_path_entries ~/METplus/ush
  setenv PYTHONPATH ~/METplus/ush:~/METplus/parm:$PYTHONPATH
  # optional
  setenv JLOGFILE ~/jlog_out |

.bashrc:

- Open your .bashrc file and do the following:

- To your PATH, add : *full-path-to-METplus*/ush

- To your PYTHONPATH, add *full-path-to-METplus*/parm

- Optional: add a JLOGFILE environment variable and set it to the directory where you want the logs to reside

- Close your .bashrc file and run `source ~/.bashrc`

-
e.g.
export PATH=~/METplus/ush:$PATH export PYTHONPATH="~/METplus/ush:~/METplus/parm:/$PYTHONPATH" #optional export JLOGFILE=~/

2.8 Set up METplus Configuration files

There are four METplus configuration files that must be defined prior to running METplus. These configuration files reside in the METplus_INSTALL_DIRECTORY/METplus/parm/metplus_config

The following configuration files are automatically loaded during a METplus run and do not need to be invoked on the command line.

- metplus_data.conf

  - data-relevant settings:

    * filename templates
    * regular expressions for input or output filenames
    * directories where input data are located

- metplus_logging.conf

  - set logging levels for METplus and MET output
  - turn on/off logging to stdout (screen) or log files

- metplus_runtime.conf

  - runtime-related settings:

    * location of METplus master_metplus.conf file (the 'master' conf file that is a collection of all the final METplus configuration files)

- metplus_system.conf

– system-related settings:

* location of METplus source code
* location of MET source and build
* location of other non-MET executables/binaries
* location of METplus parm directory

They must be fully defined by replacing all variables with */path/to's* with valid path names, or have those variables defined in a down-stream config file. If configuring METplus in a common location for multiple users, it is recommended that the these four configuration files are fully defined. Individual users have the option to make customizations by over-riding any of these values in their own configuration files.

2.9   Running METplus

Running METplus involves invoking the Python script master_metplus.py from any directory followed by a list of configuration files (file path relative to the *path_to_METplus_install_dir*/METplus/parm directory).

Example: Using a default configuration

>master_metplus.py

Does nothing, a usage message appears, indicating that other config files are required to perform useful tasks.

Example: Using a use-case configuration

>master_metplus.py -c use_cases/feature_relative/feature_relative.conf \

Runs METplus using the defaults set in the three config files found in parm/metplus_config. Any variables defined in these three config files can be over-ridden in the parm/use_cases/feature_relative/feature_relative.conf file. METplus will run using the values specified in the feature_relative.conf file.

Example: Using example configuration to perform specific evaluation (e.g. Model 1 vs. Obs1, Model 1 vs Obs 2, Model 2 vs. Obs 1, etc.)

>master_metplus.py -c use_cases/feature_relative/feature_relative.conf \

-c use_cases/feature_relative/example/series_by_lead_all_fhrs.conf

This runs METplus using the defaults set in the three config files found in parm/metplus_config, where variables can be over-ridden by parm/use_cases/feature_relative/feature_relative.conf or in parm/use_cases/feature_relative/example/series_by_lead_all_fhrs.conf. The order in which conf files are called is important. Variables that are defined in intermediate conf files will be over-ridden by the same variables set in the conf file following it, or the last conf file.

Chapter 3

METplus System Configuration

This chapter is a guide on configuring METplus.

3.1 Config Best Practices

Below is a list of Best Practices:

1. Set your log level to an appropriate level.

   (a) Debug is the most verbose and is useful for developers and when you are troubleshooting problems

   (b) Info is the less verbose than Debug and is the recommended level to initially set your log level

   (c) Warning - only logs warnings, error or critical events

   (d) Error - only logs errors or critical events

   (e) Critical is the least verbose

2. Direct your logging either to stdout or to a log file.

3. Review your log file to verify that all your processes ran cleanly.

4. The order in which you list your METplus config files matter. The last config file on the command line will over-ride any key-values defined in an earlier config file.

5. Check the master_metplus.conf file, as it contains all the key-values based on what you have specified. This will help you determine whether you forgot to replace any */path/to* with valid paths or to verify that you have defined things as you expected.

3.2   Config File Structure

METplus employs a hierarchy of configuration files employed in METplus. At the lowest level are the "set-and-forget" type configuration files that reside in the *METplus_ installation_ dir*/parm/metplus_configl At the next level are the configuration files that pertain to a user's specific needs in the *METplus_ installation_ dir*/parm/use_cases/*specific_ use_ case*

- Four configuration files are required for METplus to be fully configured (i.e. all keywords are defined by either whitespace or a valid value):

  - metplus_system

  - metplus_data

  - metplus_logging

  - metplus_runtime

  By default, key-values that require the user's input are set to */path/to*. Make sure to replace these with the appropriate directory for your project.

- Additional configuration files are optional and the key-values defined there will over-ride any values defined in the four mandatory METplus configuration files. These additional configuration files enables users to use a common set of configuration files and to create customized environments for their verification tasks.

3.3   Config Quick Start Example

Track and Intensity Use case with sample data

- Create a directory where you wish to store the sample data

- Retrieve the sample data from the GitHub repository:

  - In your browser, navigate to https://github.com/NCAR/METplus/releases

  - locate the latest release and click on the sample_data.tar.gz link associated with that release

  - save it to the directory you created above, hereafter referred to as INPUT_DATA_DIRECTORY

  - cd to your $INPUT_DATA_DIRECTORY and uncompress the tarball: *tar xvfz sample_ data.tar.gz*

  - when you perform a listing of the sample_data directory, the INPUT_DATA_DIRECTORY/sample_data/GFS contains the data you will need for this use case

- Set up the configuration file:

  - Your METplus install directory will hereafter be referred to as METplus_INSTALL

- Verify that all the *path/to* values are replaced with valid paths in the METplus_INSTALL/parm/metplus_conf/met
  and METplus_INSTALL/parm/metplus_conf/metplus_system.conf files

- Two configuration files are used in this use case, track_and_intensity.conf file and tcmp_mean_median.conf
  to take cyclone track data, and using tc_pairs_wrapper.py which wraps the MET TC-Pairs tool
  (to match ADeck and BDeck cyclone tracks to generate matched pairs and error statistics). The
  tcmpr_plotter_wrapper.py is then used (wraps the MET tool plot_tcmpr.R) to generate a mean
  and median plots for these matched pairs.

- In your editor, open the METplus_INSTALL/METplus/parm/use_cases/track_and_intensity.conf
  file:

  * You will replace any */path/to* with actual paths by setting the following:
  * PARM_BASE to the path to where you installed METplus, appended with with '*parm*':
    METplus_INSTALL/all_users/METplus/*parm*
  * OUTPUT_BASE to where you wish to save the output:
    · ADECK_TRACK_DATA_DIR to INPUT_DATA_DIRECTORY/sample_data/GFS/track_data
  * save your changes and exit your editor
  * In your editor, open the METplus_INSTALL/METplus/parm/use_cases/track_and_intensity/examples/tcm
  * Verify that PROCESS_LIST is set to TcPairs, TCMPRPlotter. This instructs METplus to
    run the TcPairs wrapper first (TC-Pairs) followed by the TCMPR plotter wrapper (plot_TCMPR.R).

- Run the use case:

  - Make sure you have set the following environment in your .cshrc (C shell) or .bashrc (Bash):
    * csh: setenv RSCRIPTS_BASE $MET_BASE/scripts/Rscripts
    * bash: export RSCIPTS_BASE $MET_BASE/scripts/Rscripts
    * Refer to Section 2.7 for the full instructions on setting up the rest of your environment
    * on your command line, run:
      · master_metplus.py -c use_cases/track_and_intensity/track_and_intensity.conf -c use_cases/track_and
    * When complete, you will have a log file in the output directory you specified, and under
      the tc_pairs directory you will see .tcst files under the 201412 subdirectory. These are the
      matched pairs created by the MET tool Tc-pairs and can be viewed in any text editor.
    * Plots are generated under the tcmpr_plots subdirectory, in .png format. You should have the
      following plots which can be viewed by any graphics viewers such as 'display' on Linux/Unix
      hosts:
      · AMAX_WIND-BMAX_WIND_mean.png
      · AMAX_WIND-BMAX_WIND_median.png
      · AMSLP-BMSLP_mean.png
      · AMSLP-BMSLP_median.png
      · TK_ERR_mean.png
      · TK_ERR_median.png

3.4   A-Z Config Glossary

This glossary was created from the two commands:

$ cat METplus/parm/metplus_config/*.conf METplus/parm/use_cases/*/*.conf METplus/parm/use_cases/*/*/*.conf
> allopts.conf

$ grep = allopts.conf | grep -v \# | sort | uniq > uniqueopts.conf

General form of glossary entry:

CONFIG_NAME_HERE
...Some description here...

Used by: Which METplus utility is this used by?
Family: Which family? [dir], [config], [filename_templates], [exe], [regex_pattern], etc...
Default: If it makes sense to include a default value (or value shipped in a release), do it here

3.4.1   A

ADECK_FILE_PREFIX
Prefix of the files in ATCF format containing tropical cyclone forecast data ("adeck" matched pairs).

Used by: tc_pairs_wrapper.py
Family: [config]
Default: Varies

ADECK_TRACK_DATA_DIR
Directory that contains the ATCF formatted files containing tropical cyclone forecast data ("adeck" matched pairs).

Used by: tc_pairs_wrapper.py
Family: [dir]
Default: Varies

AMODEL
The model name of the ADeck model data

Used by: cyclone_plotter_wrapper.py, tc_stat_wrapper.py
Family: [config]
Default:

ANLY_ASCII_REGEX_LEAD

The regular expression describing the analysis (obs) file name (in ASCII format) of the intermediate file generated when running a series by lead case.

Used by: series_by_lead_wrapper.py
Family: [regex_pattern]
Default:

ANLY_NC_TILE_REGEX

The regular expression used to search the input files that are in netCDF format and used in the series by analysis task.

Used by: series_by_lead_wrapper.py, series_by_init_wrapper.py
Family: [regex_pattern]
Default:

ANLY_TILE_PREFIX

The prefix to the filename for the analysis file that is created as part of a series analysis.

Used by: feature_util.py
Family: [regex_pattern]
Default:

ANLY_TILE_REGEX

The regular expression for the analysis input file the file is in GRIB2.

Used by: series_by_lead_wrapper.py, series_by_init_wrapper.py
Family: [regex_pattern]
Default:

3.4.2 B

BACKGROUND_MAP

Control whether or not a background map shows up for series analysis plots. Set to 'yes' if background map desired.

Used by: series_by_lead_wrapper.py, series_by_init_wrapper.py
Family: [config]
Default: no

BASIN

Control what basins are desired for tropical cyclone analysis.

Per the MET users' guide, acceptable basin ID's are:

WP = Western Northern Pacific

IO = Northern Indian Ocean

SH = Southern Hemisphere

CP = Central Northern Pacific

EP = Eastern Northern Pacific

AL = Northern Atlantic

SL = Southern Atlantic

Used by: cyclone_plotter_wrapper.py, tc_pairs_wrapper.py, tc_stat_wrapper.py

Family: [config]

Default: Varies

BDECK_FILE_PREFIX

Relevant for non-ATCF tropical cyclone data. The filename prefix for the BDeck data.

Used by: tc_pairs_wrapper.py

Family: [config]

Default: Varies

BDECK_TRACK_DATA_DIR

The input directory where the BDeck track data resides.

Used by: tc_pairs_wrapper.py

Family: [dir]

Default: Varies

BEG_TIME

Beginning time for analysis in YYYYMMDD format.

Used by: pb2nc_wrapper.py, point_stat_wrapper.py

Family: [config]

Default: Varies

BMODEL

The model name of the BDeck model data.

Used by: tc_stat_wrapper.py

Family: [config]

Default:

3.4.3   C

CIRCLE_MARKER_SIZE

Control the size of the circle marker in the cyclone plotter.

Used by: cyclone_plotter_wrapper.py

Family: [config]

Default: 41

CLOCK_TIME

Automatically set by METplus with the time that METplus was started. Setting this variable has no effect as it will be overwritten. Can be used for reference in metplus_final.conf or used with other config variables.

Used by: All

Family: [config]

Default: Set automatically to current clock time in %Y%m%d%H%M%S format

---

CONFIG_DIR

Directory containing config files relevant to MET tools.

Used by: compare_gridded_wrapper.py, ensemble_stat_wrapper.py, grid_stat_wrapper.py, mode_wrapper.py

Family: [dir]

Default: Varies

CONFIG_FILE

Specific configuration file name to use for MET tools.

Used by: grid_stat_wrapper.py, mode_wrapper.py, tcmpr_plotter_wrapper.py, tc_stat_wrapper.py

Family: [config]

Default: Varies

CONVERT_EXE

Path to the ImageMagick "convert" executable.

Used by: pb2nc_wrapper.py, point_stat_wrapper.py, series_by_init_wrapper.py, series_by_lead_wrapper.py

Family: [exe]

Default: /path/to

CROSS_MARKER_SIZE

Control the size of the cross marker in the cyclone plotter.

Used by: cyclone_plotter_wrapper.py

Family: [config]

Default: 51

CUT_EXE

Path to the Linux "cut" executable.

Used by: pb2nc_wrapper.py, point_stat_wrapper.py

Family: [exe]

Default: /path/to

CYCLONE

Specify which cyclone numbers to include in the tropical cyclone analysis. Per the MET users' guide, this can be any number 01-99 (HH format). Use a space or comma separated list, or leave unset if all cyclones are desired.

Used by: tc_pairs_wrapper.py, tc_stat_wrapper.py

Family: [config]

Default: Varies

CYCLONE_INIT_DATE

Initialization date for the cyclone forecasts in YYYYMMDD format.

Used by: cyclone_plotter_wrapper.py

Family: [config]

Default: Varies

CYCLONE_INIT_HR

Initialization hour for the cyclone forecasts in HH format.

Used by: cyclone_plotter_wrapper.py

Family: [config]

Default: Varies

CYCLONE_INPUT_DIR

Input directory for the cyclone plotter. This should be the output directory for the MET TC Pairs utility.

Used by: cyclone_plotter_wrapper.py

Family: [dir]

Default: Varies

CYCLONE_MODEL

Define the model being used for the tropical cyclone forecasts.

Used by: cyclone_plotter_wrapper.py

Family: [config]

Default: Varies

CYCLONE_OUT_DIR

Specify the directory where the output from the cyclone plotter should go.

Used by: cyclone_plotter_wrapper.py

Family: [dir]

Default: Varies

CYCLONE_PLOT_TITLE

Title string for the cyclone plotter.

Used by: cyclone_plotter_wrapper.py

Family: [config]

Default: Varies

3.4.4 D

DEMO_YR

The demo year. This is an optional value used by the plot_TCMPR.R script, (which is wrapped by tcmpr_plotter_wrapper.py). Please refer to Chapter 21 in the MET User's Guide for more details.

Used by: tcmpr_plotter_wrapper.py

Family: [config]

Default: Varies

DEP_VARS

Corresponds to the optional flag -dep in the plot_TCMPR.R, which is wrapped by tcmpr_plotter_wrapper.py. The value to this flag is a comma-separated list of dependent variable columns to plot. Please refer to Chapter 21 in the MET User's Guide for more details.

Used by: tcmpr_plotter_wrapper.py

Family: [config]

Default: Varies

DLAND_FILE

The file generated by the MET tool tc_dland, containing the gridded representation of the minimum distance to land. Please refer to Chapter 18 of the MET User's Guide for more information about the tc_dland tool.

Used by: tc_pairs_wrapper.py

Family: [config]

Default: Varies

DLAT

The latitude value, in degrees.

Used by: met_util.py

Family: [config]

Default: 0.5

DLON

The longitude value, in degrees.

Used by: met_util.py

Family: [config]

Default: 0.5

DO_NOT_RUN_EXE

True/False. If True, applications will not run and will only output command that would have been called.

Used by: command_runner.py

Family: [config]

Default: False

3.4.5 E

EGREP_EXE

Path to the Linux "egrep" executable.

Used by: feature_util.py, pb2nc_wrapper.py, point_stat_wrapper.py

Family: [exe]

Default: /path/to

END_DATE

Ending time/date string for analysis with format YYYYMMDDHH.

Used by: pb2nc_wrapper.py, point_stat_wrapper.py

Family: [config]

Default: Varies

END_HOUR

Ending hour for analysis with format HH.

Used by: pb2nc_wrapper.py, point_stat_wrapper.py

Family: [config]

Default: Varies

END_TIME

Ending date string for analysis with format YYYYMMDD.

Used by: pb2nc_wrapper.py, point_stat_wrapper.py

Family: [config]

Default: Varies

EXTRACT_OUT_DIR

Set the output directory for the METplus extract_tiles utility.

Used by: extract_tiles_wrapper.py, series_by_init_wrapper.py, series_by_lead_wrapper.py

Family: [dir]

Default: Varies

EXTRACT_TILES_FILTER_OPTS

Control what options are passed to the METplus extract_tiles utility.

Used by: extract_tiles_wrapper.py

Family: [config]

Default: Varies

EXTRACT_TILES_VAR_LIST

Control what variables the METplus extract_tiles utility runs on.

Used by: feature_util.py

Family: [config]

Default: Varies

3.4.6 F

FCST_EXACT_VALID_TIME

Used when setting FCST_* variables to process observation data for comparisons. See OBS_EXACT_VALID_TIME. Rarely used.

Used by: grid_stat_wrapper.py mode_wrapper.py, mtd_wrapper.py

Family: [config]

Default: False

FCST_[N]_FIELD_NAME

This variable is used to define a [N] hour accumulation NetCDF field in the forecast dataset used in the MET tool pcp_combine. [N] must be an integer >= 1.

Used by: pcp_combine_wrapper.py
Family: [config]
Default: Varies

FCST_ASCII_REGEX_LEAD

Regular expression used to find the forecast file (ASCII format) generated as an intermediate step in the series by lead use case.

Used by: series_by_lead_wrapper.py
Family: [regex_pattern]
Default: Varies

[deprecated] FCST_GEMPAK_INPUT_DIR

Input directory for GEMPAK formatted forecast files. Use GEMPAKTOCF_INPUT_DIR if GempakToCF is in the PROCESS_LIST.

Used by: pcp_combine_wrapper.py
Family: [dir]
Default: Varies

[deprecated] FCST_GEMPAK_TEMPLATE

Template used to specify input filenames for GEMPAK formatted forecast files. Use GEMPAKTOCF_INPUT_TEMPLATE if GempakToCF is in the PROCESS_LIST.

Used by: pcp_combine_wrapper.py
Family: [filename_templates]
Default: Varies

FCST_GRID_STAT_INPUT_DATATYPE

Specify the data type of the input directory for forecast files used with the MET grid_stat tool. Currently valid options are NETCDF, GRIB, and GEMPAK. If set to GEMPAK, data will automatically be converted to NetCDF via GempakToCF.

Used by: grid_stat_wrapper.py
Family: [config]
Default: Varies

FCST_GRID_STAT_INPUT_DIR

Input directory for forecast files to use with the MET tool grid_stat.

Used by: grid_stat_wrapper.py
Family: [dir]

Default: Varies

FCST_GRID_STAT_INPUT_TEMPLATE

Template used to specify forecast input filenames for the MET tool grid_stat.

Used by: grid_stat_wrapper.py

Family: [filename_templates]

Default: Varies

FCST_GRID_STAT_PROB_THRESH

Threshold values to be used for probabilistic data in grid_stat. The value can be a single item or a comma separated list of items that must start with a comparison operator $(>,>=,==,!=,<,<=,gt,ge,eq,ne,lt,le)$.

Used by: grid_stat_wrapper.py

Family: [config]

Default: ==0.1

FCST_HR_END

Specify the maximum forecast hour to use.

Used by: point_stat_wrapper.py

Family: [config]

Default: Varies

FCST_HR_INTERVAL

Specify the stride for forecast lead times.

Used by: point_stat_wrapper.py

Family: [config]

Default: Varies

FCST_HR_START

Specify the starting forecast hour to use.

Used by: point_stat_wrapper.py

Family: [config]

Default: Varies

[deprecated] FCST_INIT_INTERVAL

Specify the stride for forecast initializations.

Used by: compare_gridded_wrapper.py, ensemble_stat_wrapper.py, grid_stat_wrapper.py, mode_wrapper.py

Family: [config]

Default: Varies

FCST_INPUT_DIR_REGEX

Specify the regular expression used for searching for forecast file input directories.

Used by: point_stat_wrapper.py

Family: [regex_pattern]

Default: Varies

[deprecated] FCST_INPUT_DIR

Specify the input directory for the forecast files. Use FCST_[MET-APP]_INPUT_DIR instead, i.e. FCST_GRID_STAT_IN

Used by: compare_gridded_wrapper.py, grid_stat_wrapper.py, mode_wrapper.py, point_stat_wrapper.py,
pcp_combine_wrapper.py

Family: [dir]

Default: Varies

FCST_INPUT_FILE_REGEX

Regular expression to use when identifying which forecast file to use.

Used by: point_stat_wrapper.py

Family: [regex_pattern]

Default: Varies

FCST_INPUT_FILE_TMPL

Specify the filename template for input forecast files.

Used by: point_stat_wrapper.py

Family: [filename_templates]

Default: Varies

FCST_IS_DAILY_FILE

Specify whether the forecast file is a daily file or not.

Acceptable values: true/false

Used by: pcp_combine_wrapper.py

Family: [config]

Default: False

FCST_IS_PROB

Specify whether the forecast data are probabilistic or not.

Acceptable values: true/false

Used by: compare_gridded_wrapper.py, ensemble_stat_wrapper.py, grid_stat_wrapper.py, mode_wrapper.py

Family: [config]

Default: False

FCST_LEVEL

Specify what accumulation level should be used from the forecast data for the analysis. Used only when running pcp_combine with SUBTRACT mode set or processing accumulation files that do not have the accumulation specified in the filename template.

Used by: pcp_combine_wrapper.py
Family: [config]
Default: Varies

[deprecated] FCST_MAX_FORECAST

Specify the maximum forecast lead time to use for the analysis.

Used by: compare_gridded_wrapper.py, ensemble_stat_wrapper.py, grid_stat_wrapper.py, mode_wrapper.py
Family: [config]
Default: Varies

FCST_MODE_INPUT_DATATYPE

Specify the data type of the input directory for forecast files used with the MET mode tool. Currently valid options are NETCDF, GRIB, and GEMPAK. If set to GEMPAK, data will automatically be converted to NetCDF via GempakToCF.

Used by: mode_wrapper.py
Family: [config]
Default: Varies

FCST_MODE_INPUT_DIR

Input directory for forecast files to use with the MET tool mode.

Used by: mode_wrapper.py
Family: [dir]
Default: Varies

FCST_MODE_INPUT_TEMPLATE

Template used to specify forecast input filenames for the MET tool mode.

Used by: mode_wrapper.py
Family: [filename_templates]
Default: Varies

FCST_MTD_INPUT_DATATYPE

Specify the data type of the input directory for forecast files used with the MET mode-TD tool. Currently valid options are NETCDF, GRIB, and GEMPAK. If set to GEMPAK, data will automatically be converted to NetCDF via GempakToCF.

Used by: mtd_wrapper.py
Family: [config]
Default: Varies

FCST_MTD_INPUT_DIR
Input directory for forecast files to use with the MET tool mode-TD.

Used by: mtd_wrapper.py
Family: [dir]
Default: Varies

FCST_MTD_INPUT_TEMPLATE
Template used to specify forecast input filenames for the MET tool mode-TD.

Used by: mtd_wrapper.py
Family: [filename_templates]
Default: Varies

[deprecated] FCST_NATIVE_DATA_TYPE
Specify the data format of the forecast data. Use FCST_PCP_COMBINE_INPUT_DATATYPE instead

Used by: pcp_combine_wrapper.py
Family: [config]
Default: Varies

FCST_NC_TILE_REGEX
Define the regular expression for input forecast files that are in netCDF.

Used by: series_by_lead_wrapper.py, series_by_init_wrapper.py
Family: [regex_pattern]
Default: Varies

FCST_PCP_COMBINE_INPUT_DATATYPE
Specify the data type of the input directory for forecast files used with the MET pcp_combine tool. Currently valid options are NETCDF, GRIB, and GEMPAK. Required by pcp_combine if FCST_PCP_COMBINE_RUN is True. Replaces deprecated variable FCST_NATIVE_DATA_TYPE.

Used by: pcp_combine_wrapper.py
Family: [config]
Default: Varies

FCST_PCP_COMBINE_INPUT_DIR
Specify the input directory for forecast files used with the MET pcp_combine tool.

Used by: pcp_combine_wrapper.py
Family: [dir]

Default: Varies

FCST_PCP_COMBINE_INPUT_TEMPLATE

Template used to specify input filenames for forecast files used by the MET pcp_combine tool.

Used by: pcp_combine_wrapper.py

Family: [filename_templates]

Default: Varies

FCST_PCP_COMBINE_OUTPUT_DIR

Specify the output directory for forecast files generated by the MET pcp_combine tool.

Used by: pcp_combine_wrapper.py

Family: [dir]

Default: Varies

FCST_PCP_COMBINE_OUTPUT_TEMPLATE

Template used to specify output filenames for forecast files generated by the MET pcp_combine tool.

Used by: pcp_combine_wrapper.py

Family: [filename_templates]

Default: Varies

FCST_PCP_COMBINE_RUN

Specify whether to run the MET pcp_combine tool on forecast data or not.

Acceptable values: true/false

Used by: pcp_combine_wrapper.py

Family: [config]

Default: Varies

FCST_REGRID_DATA_PLANE_INPUT_DATATYPE

Specify the data type of the input directory for forecast files used with the MET regrid_data_plane tool. Currently valid options are NETCDF, GRIB, and GEMPAK. Required by pcp_combine.

Used by: regrid_data_plane_wrapper.py

Family: [config]

Default: Varies

FCST_REGRID_DATA_PLANE_INPUT_DIR

Specify the input directory for forecast files used with the MET regrid_data_plane tool.

Used by: regrid_data_plane_wrapper.py

Family: [dir]

Default: Varies

FCST_REGRID_DATA_PLANE_INPUT_TEMPLATE

Template used to specify input filenames for forecast data used by the MET regrid_data_plane tool. It not set, METplus will use FCST_REGRID_DATA_PLANE_TEMPLATE.

Used by: regrid_data_plane_wrapper.py

Family: [filename_templates]

Default: Varies

FCST_REGRID_DATA_PLANE_OUTPUT_TEMPLATE

Template used to specify output filenames for forecast data used by the MET regrid_data_plane tool. It not set, METplus will use FCST_REGRID_DATA_PLANE_TEMPLATE.

Used by: regrid_data_plane_wrapper.py

Family: [filename_templates]

Default: Varies

FCST_REGRID_DATA_PLANE_TEMPLATE

Template used to specify filenames for forecast data used by the MET regrid_data_plane tool. To specify different templates for input and output files , use FCST_REGRID_DATA_PLANE_INPUT_TEMPLATE and FCST_REGRID_DATA_PLANE_OUTPUT_TEMPLATE.

Used by: regrid_data_plane_wrapper.py

Family: [filename_templates]

Default: Varies

FCST_REGRID_DATA_PLANE_OUTPUT_DIR

Specify the output directory for forecast files used with the MET regrid_data_plane tool.

Used by: regrid_data_plane_wrapper.py

Family: [dir]

Default: Varies

FCST_TILE_PREFIX

Prefix for forecast tile files. Used to create filename of intermediate files that are created while performing a series analysis.

Used by: feature_util.py

Family: [regex_pattern]

Default: Varies

FCST_TILE_REGEX

Regular expression for forecast input files that are in GRIB2.

Used by: series_by_init_wrapper.py, series_by_lead_wrapper.py
Family: [regex_pattern]
Default: Varies

[deprecated] FCST_VAR
Define the name of the forecast variable to be used in the analysis. See FCST_VAR[N]_NAME, FCST_VAR[N]_LEVELS, FCST_VAR[N]_THRESH, and FCST_VAR[N]_OPTIONS where [N] = integer >= 1.

Used by: compare_gridded_wrapper.py, ensemble_stat_wrapper.py, make_plots_wrapper.py, met_util.py
Family: [config]
Default: Varies

FCST_VAR[N]_LEVELS
Define the levels for the [N]th forecast variable to be used in the analysis where [N] is an integer >= 1. The value can be a single item or a comma separated list of items. You can define NetCDF levels, such as (0,*,*), but you will need to surround these values with quotation marks so that the commas in the item are not interpreted as an item delimeter. Some examples:

FCST_VAR1_LEVELS = A06, P500
FCST_VAR2_LEVELS = "(0,*,*)", "(1,*,*)"

If FCST_VAR[N]_LEVELS is not set but OBS_VAR[N]_LEVELS is, the same information will be used for both variables. There can be [N] number of these variables defined in configuration files, simply increment the "_VAR1_" string to match the total number of variables being used, e.g.:
FCST_VAR1_LEVELS
FCST_VAR2_LEVELS
...
FCST_VAR[N]_LEVELS

Used by: make_plots_wrapper.py, met_util.py
Family: [config]
Default: Varies

FCST_VAR[N]_NAME
Define the name for the [N]th forecast variable to be used in the analysis where [N] is an integer >= 1. If FCST_VAR[N]_NAME is not set but OBS_VAR[N]_NAME is, the same information will be used for both variables. There can be [N] number of these variables defined in configuration files, simply increment the "_VAR1_" string to match the total number of variables being used, e.g.:
FCST_VAR1_NAME
FCST_VAR2_NAME
...
FCST_VAR[N]_NAME

Used by: make_plots_wrapper.py, met_util.py

Family: [config]
Default: Varies

FCST_VAR[N]_OPTIONS

Define the options for the [N]th forecast variable to be used in the analysis where [N] is an integer >= 1. These addition options will be applied to every name/level/threshold combination for VAR[N]. If FCST_VAR[N]_OPTIONS is not set but OBS_VAR[N]_OPTIONS is, the same information will be used for both variables. There can be [N] number of these variables defined in configuration files, simply increment the "_VAR1_" string to match the total number of variables being used, e.g.:
FCST_VAR1_OPTIONS
FCST_VAR2_OPTIONS
...
FCST_VAR[N]_OPTIONS

Used by: make_plots_wrapper.py, met_util.py
Family: [config]
Default: Varies

FCST_VAR[N]_THRESH

Define the threshold(s) for the [N]th forecast variable to be used in the analysis where [N] is an integer >= 1. The value can be a single item or a comma separated list of items that must start with a comparison operator (>,>=,==,!=,<,<=,gt,ge,eq,ne,lt,le). If FCST_VAR[N]_THRESH is not set but OBS_VAR[N]_THRESH is, the same information will be used for both variables. There can be [N] number of these variables defined in configuration files, simply increment the "_VAR1_" string to match the total number of variables being used, e.g.:
FCST_VAR1_THRESH
FCST_VAR2_THRESH
...
FCST_VAR[N]_THRESH

Used by: met_util.py
Family: [config]
Default: Varies

FHR_BEG

Specify the first forecast lead time to use in the analysis. Use in combination with FHR_END and FHR_INC.

Used by: series_by_lead_wrapper.py
Family: [config]
Default: Varies

FHR_END

Specify the last forecast lead time to use in the analysis. Use in combination with FHR_BEG and FHR_INC.

Used by: series_by_lead_wrapper.py
Family: [config]
Default: Varies

FHR_GROUP_BEG

Define which forecast lead time should be first in a group of forecast leads to use in the analysis. Use in combination with FHR_GROUP_END and FHR_INC.
Example:
FHR_GROUP_BEG = 24
FHR_GROUP_END = 42
FHR_INC = 6

List of forecast leads processed: [24, 30, 36, 42]

Used by: series_by_lead_wrapper.py
Family: [config]
Default: Varies

FHR_GROUP_END

Define which forecast lead time should be the last in a group of forecast leads to use in the analysis. Use in combination with FHR_GROUP_BEG and FHR_INC.
Example:
FHR_GROUP_BEG = 24
FHR_GROUP_END = 42
FHR_INC = 6

List of forecast leads processed: [24, 30, 36, 42]

Used by: series_by_lead_wrapper.py
Family: [config]
Default: Varies

FHR_GROUP_LABELS

Label strings to use for the forecast groups.

Used by: series_by_lead_wrapper.py
Family: [config]
Default: Varies

FHR_INC

Stride to use for incrementing forecast lead times used in the analysis. Use in combination with FHR_BEG and FHR_END or FHR_GROUP_BEG and FHR_GROUP_END.

Used by: series_by_lead_wrapper.py
Family: [config]

Default: Varies

FILTER

Corresponds to the optional -filter argument to the plot_TCMPR.R script which is wrapped by tcmpr_plotter_wrapper.py. This is a list of filtering options for the tc_stat tool.

Used by: tcmpr_plotter_wrapper.py
Family: [config]
Default: Varies

FILTERED_TCST_DATA_FILE

Corresponds to the optional -tcst argument to the plot_TCMPR.R script which is wrapped by tcmpr_plotter_wrapper.py. This is a tcst data file to be used instead of running the tc_stat tool. Indicate a full path to the data file.

Used by: tcmpr_plotter_wrapper.py
Family: [config]
Default: Varies

FOOTNOTE_FLAG

This corresponds to the optional -footnote flag in the plot_TCMPR.R script which is wrapped by tcmpr_plotter_wrapper.py. According to the plot_TCMPR.R usage, this flag is used to disable footnote (date).

Used by: tcmpr_plotter_wrapper.py
Family: [config]
Default: Varies

FORECAST_TMPL

Filename template used to filter forecast files.

Used by: tc_pairs_wrapper.py
Family: [filename_templates]
Default: Varies

FOURIER_HEIGHT_DECOMP

Specify whether to perform a Fourier height decomposition or not.

Acceptable values: true/false

Used by: make_plots_wrapper.py, stat_analysis_wrapper.py
Family: [config]
Default: Varies

3.4.7 G

GEMPAKTOCF_INPUT_DIR

Specify the input directory for the tool used to convert GEMPAK files to netCDF.

Used by: gempak_to_cf_wrapper.py

Family: [dir]

Default: Varies

GEMPAKTOCF_INPUT_TEMPLATE

Filename template used for input files to the tool used to convert GEMPAK files to netCDF.

Used by: gempak_to_cf_wrapper.py

Family: [filename_templates]

Default: Varies

GEMPAKTOCF_OUTPUT_DIR

Specify the output directory for files generated by the tool used to convert GEMPAK files to netCDF.

Used by: gempak_to_cf_wrapper.py

Family: [dir]

Default: Varies

GEMPAKTOCF_OUTPUT_TEMPLATE

Filename template used for output files from the tool used to convert GEMPAK files to netCDF.

Used by: gempak_to_cf_wrapper.py

Family: [filename_templates]

Default: Varies

GENERATE_TRACK_ASCII

Specify whether or not to produce an ASCII file containing all of the tracks in the plot.

Acceptable values: true/false

Used by: cyclone_plotter_wrapper.py

Family: [conf]

Default: Varies

[deprecated] GEN_SEQ

Used by:

Family:

Default:

GFS_ANLY_FILE_TMPL
Filename template used to identify the GFS analysis file.

Used by: feature_util.py
Family: [filename_templates]
Default: Varies

GFS_FCST_FILE_TMPL
Filename templated used to identify the GFS forecast files.

Used by: feature_util.py
Family: [filename_templates]
Default: Varies

GRID_STAT_CONFIG
Specify the absolute path to the configuration file used by the MET grid_stat tool.

Used by: grid_stat_wrapper.py
Family: [config]
Default: Varies

GRID_STAT_ONCE_PER_FIELD
STrue/False. If True, grid_stat will run once to process all name/level/threshold combinations specified. If False, it will run once for each name/level. Some cases require this to be set to False, for example processing probablistic forecasts or precipitation accumulations.

Used by: grid_stat_wrapper.py
Family: [config]
Default: False

GRID_STAT_OUT_DIR
Specify the output directory where files from the MET grid_stat tool are written.

Used by: grid_stat_wrapper.py
Family: [dir]
Default: Varies

3.4.8   H

HFIP_BASELINE

Corresponds to the optional -hfip_bsln flag in the plot_TCMPR.R script which is wrapped by tcmpr_plotter_wrapper.py. This is a string that indicates whether to add the HFIP baseline, and indicates the version (no, 0, 5, 10 year goal).

Used by: tcmpr_plotter_wrapper.py
Family: [config]
Default: Varies

3.4.9   I

INIT_BEG
Specify the beginning initialization time to be used in the analysis. Format can be controlled by INIT_TIME_FMT.

Used by: command_builder.py, extract_tiles_wrapper.py, make_plots_wrapper.py, master_metplus.py, stat_analysis_wrapper.py, tc_pairs_wrapper.py, tc_stat_wrapper.py
Family: [config]
Default: Varies

INIT_BEG_HOUR
Specify the beginning initialization hour to be used in the analysis. Format is HH.

Used by: make_plots_wrapper.py, stat_analysis_wrapper.py
Family: [config]
Default: Varies

INIT_END
Specify the ending initialization time to be used in the analysis. Format can be controlled by INIT_TIME_FMT.

Used by: command_builder.py, extract_tiles_wrapper.py, make_plots_wrapper.py, master_metplus.py, stat_analysis_wrapper.py, tc_pairs_wrapper.py, tc_stat_wrapper.py
Family: [config]
Default: Varies

INIT_END_HOUR
Specify the ending initialization hour to be used in the analysis. Format is HH.

Used by: make_plots_wrapper.py, stat_analysis_wrapper.py
Family: [config]
Default: Varies

INIT_EXCLUDE
Specify which, if any, forecast initializations to exclude from the analysis.

Used by: tc_pairs_wrapper.py, tc_stat_wrapper.py
Family: [config]
Default: Varies

INIT_HOUR_END

Specify the ending initialization hour to be used in the analysis. Format is HH.

Used by: extract_tiles_wrapper.py, tc_pairs_wrapper.py, tc_stat_wrapper.py
Family: [config]
Default: Varies

INIT_INCLUDE

Specify which forecast initializations to include in the analysis.

Used by: tc_pairs_wrapper.py, tc_stat_wrapper.py
Family: [config]
Default: Varies

INIT_INCREMENT

Control the increment or stride to use when stepping between forecast initializations. Units are seconds.

Used by: command_builder.py, extract_tiles_wrapper.py, make_plots_wrapper.py, master_metplus.py, stat_analysis_wrapper.py, tc_pairs_wrapper.py, tc_stat_wrapper.py
Family: [config]
Default: Varies

INIT_TIME_FMT

Specify a formatting string to use for INIT_BEG and INIT_END.

Used by: command_builder.py, master_metplus.py
Family:
Default:

INTERVAL_TIME

Define the interval time in hours (HH) to be used by the MET pb2nc tool.

Used by: pb2nc_wrapper.py
Family: [config]
Default: Varies

3.4.10   J

3.4.11   K

3.4.12   L

LAT_ADJ
Specify a latitude adjustment, in degrees to be used in the analysis.

Used by: met_util.py
Family: [config]
Default: Varies

LEAD
For cyclone_plotter_wrapper.py, this refers to the column of interest in the input ASCII cyclone file.

In the tcmpr_plotter_wrapper.py, this corresponds to the optional -lead argument in the plot_TCMPR.R script (which is wrapped by tcmpr_plotter.py). This argument is set to a comma-separated list of lead times (h) to be plotted.

In feature_util.py, this corresponds to the name of the column of interest in the input ASCII data file.

In tc_stat_wrapper.py, this corresponds to the name of the column of interest in the input ASCII data file.

Used by: cyclone_plotter_wrapper.py, tcmpr_plotter_wrapper.py, feature_util.py, tc_stat_wrapper.py
Family: [config]
Default: Varies

LEAD_LIST
Specify a list of forecast leads to include in the analysis. Comma separated list format, e.g.:
0, 24, 48, 72, 96, 120

Used by: make_plots_wrapper.py, stat_analysis_wrapper.py
Family: [config]
Default: Varies

LEAD_SEQ
Specify the sequence of forecast lead times to include in the analysis. Comma separated list format, e.g.:
0, 6, 12

Used by: compare_gridded_wrapper.py, ensemble_stat_wrapper.py, gempak_to_cf_wrapper.py, grid_stat_wrapper.py, mode_wrapper.py, reformat_gridded_wrapper.py
Family: [config]

Default: Varies

LEGEND

The text to be includede in the legend of your plot.

Used by: tcmpr_plotter_wrapper.py

Family: [config]

Default: Varies

LOG_DIR

Specify the directory where log files from MET and METplus should be written.

Used by: command_builder.py, met_util.py

Family: [dir]

Default: Varies

LOG_LEVEL

Specify the level of logging.

Everything above this level is sent to standard output. To quiet the output to a comfortable level, set this to "ERROR".

Options (ordered MOST verbose to LEAST verbose):

NOTSET

DEBUG

INFO

WARNING

ERROR

CRITICAL

Used by: met_util.py

Family: [config]

Default: Varies

LOG_METPLUS

Control the filename of the METplus log file. Control the timestamp appended to the filename with LOG_TIMESTAMP_TEMPLATE. To turn OFF all logging, do not set this option.

Used by: master_metplus.py, met_util.py

Family: [config]

Default: Varies

LOG_MET_OUTPUT_TO_METPLUS

Control whether logging output from the MET tools is sent to the METplus log file, or individual log files for each MET tool.

Used by: command_runner.py
Family: [config]
Default: yes/no

LOG_MET_VERBOSITY
Control the verbosity of the logging from the MET tools.

0 = Least amount of logging (lowest verbosity)

5 = Most amount of logging (highest verbosity)

Used by: command_builder.py
Family: [config]
Default: 2

LOG_TIMESTAMP_TEMPLATE
Set the timestamp template for the METplus log file. Use Python strftime directives, e.g.
%Y%m%d for YYYYMMDD.

Used by: met_util.py
Family: [config]
Default: %Y%m%d

LOG_TIMESTAMP_USE_DATATIME
STrue/False. Determines which time to use for the log filenames. If True, use INIT_BEG if LOOP_BY_INIT
is True or VALID_BEG if LOOP_BY_INIT is False. If False, use current time.

Used by: met_util.py
Family: [config]
Default: False

LON_ADJ
Specify a longitude adjustment, in degrees to be used in the analysis.

Used by: met_util.py
Family: [config]
Default: Varies

LOOP_BY_INIT
Control whether the analysis is processed across initialization times or not. If set to false, loop by valid time

Used by: command_builder.py, compare_gridded_wrapper.py, ensemble_stat_wrapper.py, grid_stat_wrapper.py,
make_plots_wrapper.py, master_metplus.py, mode_wrapper.py, stat_analysis_wrapper.py
Family: [config]
Default: true

LOOP_METHOD

Control the looping method for METplus. Valid options are "times" or "processes". "times" runs all items in the PROCESS_LIST for a single run time, then repeat until all times have been evaluated. "processes" runs each item in the PROCESS_LIST for all times specified, then repeat for the next item in the PRO-CESS_LIST

Used by: master_metplus.py, pb2nc_wrapper.py, point_stat_wrapper.py
Family: [config]
Default: Varies

3.4.13 M

METPLUS_BASE

This variable will automatically be set by METplus when it is started. It will be set to the location of METplus that is currently being run. Setting this variable in a config file will have no effect and will report a warning that it is being overridden.

Used by: All
Family: [dir]
Default: Location METplus is being run from

METPLUS_CONF

Provide the absolute path to the METplus final configuration file. This file will contain every configuration option and value used when METplus was run.

Used by: config_launcher.py
Family: [config]
Default: Varies

MET_BASE

The base directory where your MET installation resides.

Used by: cyclone_plotter_wrapper.py, extract_tiles_wrapper.py, master_metplus.py, met_util.py, pb2nc_wrapper.py, point_stat_wrapper.py, series_by_init_wrapper.py, series_by_lead_wrapper.py, tcmpr_plotter_wrapper.py, tc_pairs_wrapper.py, usage_wrapper.py
Family: [dir]
Default:

MET_BIN

The location of MET binaries.

Used by:
Family:

Default:

MET_BUILD_BASE

The base directory of the MET install. Only needed if using MET version 6.0

Used by: tcmpr_plotter_wrapper.py
Family: [dir]
Default: Varies

MET_INSTALL_DIR

The base directory of the MET install. To be defined when using MET version 6.1 and beyond

Used by: compare_gridded_wrapper.py, cyclone_plotter_wrapper.py, ensemble_stat_wrapper.py, extract_tiles_wrapper.py, feature_util.py, grid_stat_wrapper.py, mode_wrapper.py, pb2nc_wrapper.py, pcp_combine_wrap point_stat_wrapper.py, regrid_data_plane_wrapper.py, series_by_init_wrapper.py, series_by_lead_wrapper.py, stat_analysis_wrapper.py, tcmpr_plotter_wrapper.py, tc_pairs_wrapper.py, tc_stat_wrapper.py, wavelet_stat_wrapper.
Family: [dir]
Default: Varies

MISSING_VAL

Specify the missing value code.

Used by: tc_pairs_wrapper.py
Family: [config]
Default: Varies

MISSING_VAL_TO_REPLACE

Specify the missing value code to replace.

Used by: tc_pairs_wrapper.py
Family: [config]
Default: Varies

MODEL

Specify the model name.

Used by: compare_gridded_wrapper.py, ensemble_stat_wrapper.py, stat_analysis_wrapper.py, tc_pairs_wrapper.py
Family: [config]
Default: Varies

MODEL1_NAME

Define the model name for the first model to be used in the analysis. There can be N number of models defined in configuration files, simply increment the "MODEL1_" string to match the total number of models being used, e.g.:
MODEL1_NAME

MODEL2_NAME

.

.

.

MODELN_NAME

Used by: make_plots_wrapper.py, stat_analysis_wrapper.py
Family: [config]
Default: Varies

MODEL1_DIR

Define the stat file directrory for the first model to be used in the analysis. There can be N number of model directories defined in configuration files, simply increment the "MODEL1_" string to match the total number of models being used, e.g.:
MODEL1_DIR
MODEL2_DIR

.

.

.

MODELN_DIR

Used by: stat_analysis_wrapper.py
Family: [config]
Default: Varies

MODEL_DATA_DIR

Specify the directory where the model data are located.

Used by: feature_util.py
Family: [dir]
Default: Varies

MODEL_NAME

Specify the model name.

Used by: point_stat_wrapper.py
Family: [config]
Default: Varies

MODE_CONFIG

Path to mode configuration file.

Used by: mode_wrapper.py
Family: [config]
Default: Varies

MODE_CONV_RADIUS

Comma separated list of convolution radius values used by mode for both forecast and observation fields. Has the same behavior as setting MODE_FCST_CONV_RADIUS and MODE_OBS_CONV_RADIUS to the same value.

Used by: mode_wrapper.py

Family: [config]

Default: 5

MODE_CONV_THRESH

Comma separated list of convolution threshold values used by mode for both forecast and observation fields. Has the same behavior as setting MODE_FCST_CONV_THRESH and MODE_OBS_CONV_THRESH to the same value.

Used by: mode_wrapper.py

Family: [config]

Default: >0.5

MODE_FCST_CONV_RADIUS

Comma separated list of convolution radius values used by mode for forecast fields.

Used by: mode_wrapper.py

Family: [config]

Default:5

MODE_FCST_CONV_THRESH

Comma separated list of convolution threshold values used by mode for forecast fields.

Used by: mode_wrapper.py

Family: [config]

Default:5

MODE_FCST_MERGE_FLAG

Sets the merge_flag value in the mode config file for forecast fields. Valid values are NONE, THRESH, ENGINE, and BOTH.

Used by: mode_wrapper.py

Family: [config]

Default: THRESH

MODE_FCST_MERGE_THRESH

Comma separated list of merge threshold values used by mode for forecast fields.

Used by: mode_wrapper.py

Family: [config]

Default: >0.45

MODE_MERGE_CONFIG_FILE

Path to mode merge config file.

Used by: mode_wrapper.py
Family: [config]
Default: Varies

MODE_MERGE_FLAG

Sets the merge_flag value in the mode config file for both forecast and observation fields. Has the same behavior as setting MODE_FCST_MERGE_FLAG and MODE_OBS_MERGE_FLAG to the same value. Valid values are NONE, THRESH, ENGINE, and BOTH.

Used by: mode_wrapper.py
Family: [config]
Default: THRESH

MODE_MERGE_THRESH

Comma separated list of merge threshold values used by mode for forecast and observation fields. Has the same behavior as setting MODE_FCST_MERGE_THRESH and MODE_OBS_MERGE_THRESH to the same value.

Used by: mode_wrapper.py
Family: [config]
Default: >0.45

MODE_OBS_CONV_RADIUS

Comma separated list of convolution radius values used by mode for observation fields.

Used by: mode_wrapper.py
Family: [config]
*Default:*5

MODE_OBS_CONV_THRESH

Comma separated list of convolution threshold values used by mode for observation fields.

Used by: mode_wrapper.py
Family: [config]
*Default:*5

MODE_OBS_MERGE_FLAG

Sets the merge_flag value in the mode config file for observation fields. Valid values are NONE, THRESH, ENGINE, and BOTH.

Used by: mode_wrapper.py
Family: [config]
Default: THRESH

MODE_OBS_MERGE_THRESH

Comma separated list of merge threshold values used by mode for observation fields.

Used by: mode_wrapper.py
Family: [config]
Default: >0.45

MODE_OUT_DIR

Ouptut directory to write mode files.

Used by: mode_wrapper.py
Family: [dir]
Default: Varies

MODE_QUILT

True/False. If True, run all permutations of radius and threshold.

Used by: mode_wrapper.py
Family: [config]
Default: False

MTD_CONFIG

Path to mode-TD configuration file.

Used by: mtd_wrapper.py
Family: [config]
Default: Varies

MTD_CONV_RADIUS

Comma separated list of convolution radius values used by mode-TD for both forecast and observation files. Has the same behavior as setting MTD_FCST_CONV_RADIUS and MTD_OBS_CONV_RADIUS to the same value.

Used by: mtd_wrapper.py
Family: [config]
Default: 5

MTD_CONV_THRESH

Comma separated list of convolution threshold values used by mode-TD for both forecast and observation files. Has the same behavior as setting MTD_FCST_CONV_THRESH and MTD_OBS_CONV_THRESH to the same value.

MTD_FCST_CONV_RADIUS

Comma separated list of convolution radius values used by mode-TD for forecast files.

Used by: mtd_wrapper.py
Family: [config]
Default: 5

MTD_FCST_CONV_THRESH

Comma separated list of convolution threshold values used by mode-TD for forecast files.

Used by: mtd_wrapper.py
Family: [config]
Default: >0.5

MTD_OBS_CONV_RADIUS

Comma separated list of convolution radius values used by mode-TD for observation files.

Used by: mtd_wrapper.py
Family: [config]
Default: 5

MTD_OBS_CONV_THRESH

Comma separated list of convolution threshold values used by mode-TD for observation files.

Used by: mtd_wrapper.py
Family: [config]
Default: >0.5

MTD_OUT_DIR

Ouptut directory to write mode-TD files.

Used by: mtd_wrapper.py
Family: [dir]
Default: Varies

MTD_SINGLE_DATA_SRC

Only used ifMTD_SINGLE_RUN is True. Determines which data set to process. Valid options are FCST and OBS.

Used by: mtd_wrapper.py
Family: [config]

Default: FCST

MTD_SINGLE_RUN

Run mode-TD with -single option. Must set MTD_SINGLE_DATA_SRC to specify which data set to process.

Used by: mtd_wrapper.py
Family: [config]
Default: False

3.4.14 N

NCAP2_EXE

Path to the "ncap2" executable.

Used by: pb2nc_wrapper.py, point_stat_wrapper.py, series_by_lead_wrapper.py
Family: [exe]
Default: /path/to

NCDUMP_EXE

Path to the "ncdump" executable.

Used by: met_util.py, pb2nc_wrapper.py, point_stat_wrapper.py, series_by_lead_wrapper.py
Family: [exe]
Default: /path/to

NC_FILE_TMPL

File template used to match netCDF files used for analysis.

Used by: pb2nc_wrapper.py
Family: [filename_templates]
Default: Varies

NLAT

The number of latitude points.

Used by: met_util.py
Family: [config]
Default: Varies

NLON

The number of longitude points.

Used by: met_util.py
Family: [config]
Default: Varies

NO_EE

Set the "NO_EE" flag for the TC Matched Pairs plotting utility.

Acceptable values: yes/no

Used by: tcmpr_plotter_wrapper.py
Family: [config]
Default: no

NO_LOG

Set the "NO_LOG" flag for the TC Matched Pairs plotting utility.

Acceptable values: yes/no

Used by: tcmpr_plotter_wrapper.py
Family: [config]
Default: no

3.4.15   O

OBS_[N]_FIELD_NAME

This variable is used to define a [N] hour accumulation NetCDF field in the observation dataset used in the MET tool pcp_combine. [N] must be an integer >= 1.

Used by: pcp_combine_wrapper.py
Family: [config]
Default: Varies

OBS_BUFR_VAR_LIST

Specify which BUFR codes to use from the observation dataset when using the MET pb2nc tool. Format is comma separated list, e.g.:

PMO, TOB, TDO

Used by: pb2nc_wrapper.py
Family: [config]
Default: Varies

[deprecated] OBS_DATA_INTERVAL

Specify the accumulation interval of the observation dataset used by the MET pcp_combine tool.

Used by: pcp_combine_wrapper.py
Family: [config]
Default: Varies

[deprecated] OBS_GEMPAK_INPUT_DIR

Specify the input directory for GEMPAK formatted observation files. Use GEMPAKTOCF_INPUT_DIR if running GempakToCF from the PROCESS_LIST.

Used by: pcp_combine_wrapper.py
Family: [dir]
Default: Varies

[deprecated] OBS_GEMPAK_TEMPLATE

Filename template used to filter GEMPAK formatted observation files. Use GEMPAKTOCF_INPUT_TEMPLATE if running GempakToCF from the PROCESS_LIST.

Used by: pcp_combine_wrapper.py
Family: [filename_templates]
Default: Varies

OBS_GRID_STAT_INPUT_DATATYPE

Specify the data type of the input directory for observation files used with the MET grid_stat tool. Currently valid options are NETCDF, GRIB, and GEMPAK. If set to GEMPAK, data will automatically be converted to NetCDF via GempakToCF.

Used by: grid_stat_wrapper.py
Family: [config]
Default: Varies

OBS_GRID_STAT_INPUT_DIR

Specify the directory where the input observation files are for the MET grid_stat tool.

Used by: grid_stat_wrapper.py
Family: [dir]
Default: Varies

OBS_GRID_STAT_INPUT_TEMPLATE

Filename template used to filter input observation files used by the MET grid_stat tool.

Used by: grid_stat_wrapper.py
Family: [filename_templates]

Default: Varies

OBS_GRID_STAT_PROB_THRESH

Threshold values to be used for probabilistic data in grid_stat. Used when setting OBS_* variables to probabilistic forecast data for comparison. The value can be a single item or a comma separated list of items that must start with a comparison operator ($>$,$>=$,$==$,!=,$<$,$<=$,gt,ge,eq,ne,lt,le).

Used by: grid_stat_wrapper.py
Family: [config]
Default: $==0.1$

OBS_INPUT_DIR

Specify the input directory for observation files.

Used by: point_stat_wrapper.py
Family: [dir]
Default: Varies

OBS_INPUT_DIR_REGEX

Specify the regular expression to use when searching for observation file input directories.

Used by: point_stat_wrapper.py
Family: [regex_pattern]
Default: Varies

OBS_INPUT_FILE_REGEX

Regular expression used to filter observation input files used in the analysis.

Used by: point_stat_wrapper.py,
Family: [regex_pattern]
Default: Varies

OBS_INPUT_FILE_TEMPL

Specify the filename template to use for observation input files.

Used by: point_stat_wrapper.py,
Family: [filename_templates]
Default: Varies

OBS_IS_DAILY_FILE

Specify whether the forecast file is a daily file or not.

Acceptable values: true/false

Used by: pcp_combine_wrapper.py
Family: [config]

Default: Varies

OBS_IS_PROB

Used when setting OBS_* variables to process forecast data for comparisons with mtd. Specify whether the observation data are probabilistic or not. See FCST_IS_PROB.

Acceptable values: true/false

Used by: mtd_wrapper.py
Family: [config]
Default: False

OBS_LEVEL

Specify what accumulation level should be used from the observation data for the analysis. See FCST_LEVEL for more information

Used by: pcp_combine_wrapper.py
Family: [config]
Default: Varies

OBS_MODE_INPUT_DATATYPE

Specify the data type of the input directory for observation files used with the MET mode tool. Currently valid options are NETCDF, GRIB, and GEMPAK. If set to GEMPAK, data will automatically be converted to NetCDF via GempakToCF.

Used by: mode_wrapper.py
Family: [config]
Default: Varies

OBS_MODE_INPUT_DIR

Input directory for observation files to use with the MET tool mode.

Used by: mode_wrapper.py
Family: [dir]
Default: Varies

OBS_MODE_INPUT_TEMPLATE

Template used to specify observation input filenames for the MET tool mode.

Used by: mode_wrapper.py
Family: [filename_templates]
Default: Varies

OBS_MTD_INPUT_DATATYPE

Specify the data type of the input directory for observation files used with the MET mode-TD tool. Currently

valid options are NETCDF, GRIB, and GEMPAK. If set to GEMPAK, data will automatically be converted to NetCDF via GempakToCF.

Used by: mtd_wrapper.py
Family: [config]
Default: Varies

OBS_MTD_INPUT_DIR
Input directory for observation files to use with the MET tool mode-TD.

Used by: mtd_wrapper.py
Family: [dir]
Default: Varies

OBS_MTD_INPUT_TEMPLATE
Template used to specify observation input filenames for the MET tool mode-TD.

Used by: mtd_wrapper.py
Family: [filename_templates]
Default: Varies

OBS_NAME
Provide a string to identify the observation dataset name.

Used by: point_stat_wrapper.py
Family: [config]
Default: Varies

[deprecated] OBS_NATIVE_DATA_TYPE
Specify the data format of the observation data. Use OBS_PCP_COMBINE_INPUT_DATATYPE instead.

Used by: pcp_combine_wrapper.py
Family: [config]
Default: Varies

OBS_PCP_COMBINE_INPUT_DATATYPE
Specify the data type of the input directory for observation files used with the MET pcp_combine tool. Currently valid options are NETCDF, GRIB, and GEMPAK. If set to GEMPAK, data will automatically be converted to NetCDF via GempakToCF. Required by pcp_combine if OBS_PCP_COMBINE_RUN is True. Replaces deprecated variable OBS_NATIVE_DATA_TYPE.

Used by: pcp_combine_wrapper.py
Family: [config]
Default: Varies

OBS_PCP_COMBINE_INPUT_DIR

Specify the input directory for the observation data used by the MET pcp_combine tool.

Used by: pcp_combine_wrapper.py

Family: [dir]

Default: Varies

OBS_PCP_COMBINE_INPUT_TEMPLATE

Filename template used to filter input observation files used by the MET pcp_combine tool.

Used by: pcp_combine_wrapper.py

Family: [filename_templates]

Default: Varies

OBS_PCP_COMBINE_OUTPUT_DIR

Specify the output directory where files from the MET pcp_combine tool are written.

Used by: pcp_combine_wrapper.py

Family: [dir]

Default: Varies

OBS_PCP_COMBINE_OUTPUT_TEMPLATE

Filename template used for writing output files from the MET pcp_combine tool.

Used by: pcp_combine_wrapper.py

Family: [filename_templates]

Default: Varies

OBS_PCP_COMBINE_RUN

Specify whether to run pcp_combine on the observation data or not.

Acceptable values: True/False

Used by: pcp_combine_wrapper.py

Family: [config]

Default: Varies

OBS_REGRID_DATA_PLANE_INPUT_DATATYPE

Specify the data type of the input directory for observation files used with the MET regrid_data_plane tool. Currently valid options are NETCDF, GRIB, and GEMPAK. If set to GEMPAK, data will automatically be converted to NetCDF via GempakToCF.

Used by: regrid_data_plane_wrapper.py

Family: [config]

Default: Varies

OBS_REGRID_DATA_PLANE_INPUT_DIR

Specify the input directory for observation files used by the MET regrid_data_plane tool.

Used by: regrid_data_plane_wrapper.py
Family: [dir]
Default: Varies

OBS_REGRID_DATA_PLANE_OUTPUT_DIR

Specify the output directory where files are written from the MET regrid_data_plane tool.

Used by: regrid_data_plane_wrapper.py
Family: [dir]
Default: Varies

OBS_REGRID_DATA_PLANE_RUN

Specify whether to run regrid_data_plane on the observation data or not.

Acceptable values: True/False

Used by: regrid_data_plane_wrapper.py
Family: [config]
Default: Varies

OBS_REGRID_DATA_PLANE_INPUT_TEMPLATE

Specify the input filename template to use for observation files (input and output) used by the MET regrid_data_plane tool. If not set, METplus will use OBS_REGRID_DATA_PLANE_TEMPLATE.

Used by: regrid_data_plane_wrapper.py
Family: [filename_templates]
Default: Varies

OBS_REGRID_DATA_PLANE_OUTPUT_TEMPLATE

Specify the output filename template to use for observation files (input and output) used by the MET regrid_data_plane tool. If not set, METplus will use OBS_REGRID_DATA_PLANE_TEMPLATE.

Used by: regrid_data_plane_wrapper.py
Family: [filename_templates]
Default: Varies

OBS_REGRID_DATA_PLANE_TEMPLATE

Specify the filename template to use for observation files (input and output) used by the MET regrid_data_plane tool. To specify different templates for input and output files , use FCST_REGRID_DATA_PLANE_INPUT_TEMPLATE and FCST_REGRID_DATA_PLANE_OUTPUT_TEMPLATE.

Used by: regrid_data_plane_wrapper.py
Family: [filename_templates]
Default: Varies

[deprecated] OBS_VAR
Specify the string for the observation variable used in the analysis. See OBS_VARn_NAME, OBS_VARn_LEVELS, OBS_VARn_OPTIONS and OBS_VARn_THRESH where n = integer >= 1.

Used by: grid_stat_wrapper.py
Family: [config]
Default: Varies

OBS_VAR[N]_LEVELS
Define the levels for the [N]th observation variable to be used in the analysis where [N] is an integer >= 1. The value can be a single item or a comma separated list of items. You can define NetCDF levels, such as (0,*,*), but you will need to surround these values with quotation marks so that the commas in the item are not interpreted as an item delimeter. Some examples:

OBS_VAR1_LEVELS = A06, P500
OBS_VAR2_LEVELS = "(0,*,*)", "(1,*,*)"

If OBS_VAR[N]_LEVELS is not set but FCST_VAR[N]_LEVELS is, the same information will be used for both variables. There can be [N] number of these variables defined in configuration files, simply increment the "_VAR1_" string to match the total number of variables being used, e.g.:
OBS_VAR1_LEVELS
OBS_VAR2_LEVELS
...
OBS_VAR[N]_LEVELS

Used by: make_plots_wrapper.py, met_util.py
Family: [config]
Default: Varies

OBS_VAR[N]_NAME
Define the name for the [N]th observation variable to be used in the analysis where [N] is an integer >= 1. If OBS_VAR[N]_NAME is not set but FCST_VAR[N]_NAME is, the same information will be used for both variables. There can be [N] number of these variables defined in configuration files, simply increment the "_VAR1_" string to match the total number of variables being used, e.g.:
OBS_VAR1_NAME
OBS_VAR2_NAME
...
OBS_VAR[N]_NAME

Used by: make_plots_wrapper.py, met_util.py

Family: [config]
Default: Varies

OBS_VAR[N]_OPTIONS

Define the options for the [N]th observation variable to be used in the analysis where [N] is an integer
>= 1. These addition options will be applied to every name/level/threshold combination for VAR[N]. If
OBS_VAR[N]_OPTIONS is not set but FCST_VAR[N]_OPTIONS is, the same information will be used
for both variables. There can be [N] number of these variables defined in configuration files, simply increment
the "_VAR1_" string to match the total number of variables being used, e.g.:
OBS_VAR1_OPTIONS
OBS_VAR2_OPTIONS
...
OBS_VAR[N]_OPTIONS

Used by: make_plots_wrapper.py, met_util.py
Family: [config]
Default: Varies

OBS_VAR[N]_THRESH

Define the threshold(s) for the [N]th observation variable to be used in the analysis where [N] is an in-
teger >= 1. The value can be a single item or a comma separated list of items that must start with
a comparison operator (>,>=,==,!=,<,<=,gt,ge,eq,ne,lt,le). If OBS_VAR[N]_THRESH is not set but
FCST_VAR[N]_THRESH is, the same information will be used for both variables. There can be [N] num-
ber of these variables defined in configuration files, simply increment the "_VAR1_" string to match the
total number of variables being used, e.g.:
OBS_VAR1_THRESH
OBS_VAR2_THRESH
...
OBS_VAR[N]_THRESH

Used by: met_util.py
Family: [config]
Default: Varies

OBS_WINDOW_BEG

Corresponds to the OBS_WINDOW_BEG in the MET config file for pb2nc. Please refer to Chapter 4 of
the MET User's Guide.

Used by: pb2nc_wrapper.py, point_stat_wrapper.py
Family: [config]
Default: Varies

OBS_WINDOW_END

Corresponds to the OBS_WINDOW_END in the MET config file for pb2nc. Please refer to Chapter 4 of

the MET User's Guide.

Used by: pb2nc_wrapper.py, point_stat_wrapper.py
Family: [config]
Default: Varies

OB_TYPE

Provide a string to represent the type of observation data used in the analysis. Used in setting output filename

Used by: compare_gridded_wrapper.py, ensemble_stat_wrapper.py, grid_stat_wrapper.py, mode_wrapper.py, stat_analysis_wrapper.py
Family: [config]
Default: Varies

OUTPUT_BASE

Provide a path to the top level output directory for METplus.

Used by: config_launcher.py, pb2nc_wrapper.py, point_stat_wrapper.py, tc_pairs_wrapper.py, tc_stat_wrapper.py
Family: [dir]
Default: Varies

OVERWRITE_NC_OUTPUT

Specify whether to overwrite the netCDF output or not when using the MET pb2nc tool.

Acceptable values: yes/no

Used by: pb2nc_wrapper.py
Family: [config]
Default: yes

OVERWRITE_TRACK

Specify whether to overwrite the track data or not.

Acceptable values: yes/no

Used by: extract_tiles_wrapper.py, feature_util.py
Family: [config]
Default: no

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PARM_BASE

Specify the top level METplus parameter file directory.

Used by: config_launcher.py, pb2nc_wrapper.py, point_stat_wrapper.py, tc_stat_wrapper.py
Family: [dir]
Default: Varies

PB2NC_CONFIG_FILE
Specify the absolute path to the configuration file for the MET pb2nc tool.

Used by: pb2nc_wrapper.py
Family: [config]
Default: Varies

PB2NC_GRID
Specify a grid to use with the MET pb2nc tool.

Used by: pb2nc_wrapper.py
Family: [config]
Default: Varies

PB2NC_MESSAGE_TYPE
Specify which PREPBUFR (PB) message types to convert using the MET pb2nc tool.

Used by: pb2nc_wrapper.py
Family: [config]
Default: Varies

PB2NC_OUTPUT_DIR
Specify the directory where files will be written from the MET pb2nc tool.

Used by: pb2nc_wrapper.py
Family: [dir]
Default: Varies

PB2NC_POLY
Specify a polygon to be used with the MET pb2nc tool.

Used by: pb2nc_wrapper.py
Family: [config]
Default: Varies

PB2NC_STATION_ID
Specify the ID of the station to use with the MET pb2nc tool.

Used by: pb2nc_wrapper.py
Family: [config]

Default: Varies

PCP_COMBINE_METHOD

Specify the method to be used with the MET pcp_combine tool. Valid options are ADD, SUM, and SUBTRACT.

Used by: pcp_combine_wrapper.py

Family: [config]

Default: ADD

PLOTTING_OUT_DIR

Specify the output directory where plots will be saved.

Used by: make_plots_wrapper.py

Family: [dir]

Default: Varies

PLOTTING_SCRIPTS_DIR

Specify the directory where the plotting scripts are located.

Used by: make_plots_wrapper.py

Family: [dir]

Default: Varies

PLOT_CONFIG_OPTS

Specify plot configuration options for the TC Matched Pairs plotting tool.

Used by: tcmpr_plotter_wrapper.py

Family: [config]

Default: Varies

PLOT_STATS_LIST

Specify which statistics should be plotted in a comma separated list, e.g.:
acc, bias, rmse

Used by: make_plots_wrapper.py

Family: [config]

Default: Varies

PLOT_TYPES

Specify what plot types are desired for the TC Matched Pairs plotting tool.

Used by: tcmpr_plotter_wrapper.py

Family: [config]

Default: Varies

POINT_STAT_CONFIG_FILE

Specify the absolute path to the configuration file to be used with the MET point_stat tool.

Used by: point_stat_wrapper.py

Family: [config]

Default: Varies

POINT_STAT_GRID

Specify the grid to use with the MET point_stat tool.

Used by: point_stat_wrapper.py

Family: [config]

Default: Varies

POINT_STAT_MESSAGE_TYPE

Specify which PREPBUFR message types to process with the MET point_stat tool.

Used by: point_stat_wrapper.py

Family: [config]

Default: Varies

POINT_STAT_OUTPUT_DIR

Specify the directory where output files from the MET point_stat tool are written.

Used by: point_stat_wrapper.py

Family: [dir]

Default: Varies

POINT_STAT_POLY

Specify a polygon to use with the MET point_stat tool.

Used by: point_stat_wrapper.py

Family: [config]

Default: Varies

POINT_STAT_STATION_ID

Specify the ID of a specific station to use with the MET point_stat tool.

Used by: point_stat_wrapper.py

Family: [config]

Default: Varies

PREFIX

This corresponds to the optional -prefix flag of the plot_TCMPR.R script (which is wrapped by tcmpr_plotter_wrapper.py). This is the output file name prefix.

Used by: tcmpr_plotter_wrapper.py

Family: [config]

Default: Varies

PREPBUFR_DATA_DIR

Specify the directory where the PREPBUFR data are located for the MET pb2nc tool.

Used by: pb2nc_wrapper.py

Family: [dir]

Default: Varies

PREPBUFR_DIR_REGEX

Regular expression to use when searching for PREPBUFR data.

Used by: pb2nc_wrapper.py

Family: [regex_pattern]

Default: Varies

PREPBUFR_FILE_REGEX

Regular expression to use when searching for PREPBUFR files.

Used by: pb2nc_wrapper.py

Family: [regex_pattern]

Default: Varies

PREPBUFR_MODEL_DIR_NAME

Specify the name of the model being used with the MET pb2nc tool.

Used by: pb2nc_wrapper.py

Family: [config]

Default: Varies

PROCESS_LIST

Specify the list of processes for METplus to perform, in a comma separated list.

Used by: master_metplus.py

Family: [config]

Default: Varies

PROJ_DIR

A directory for generic use. The user can store input files (if INPUT_BASE is not defined), intermediate files, and any other project-related files.

Used by: pb2nc_wrapper.py, point_stat_wrapper.py, tc_stat_wrapper.py

Family: [dir]

Default: Varies

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REFERENCE_TMPL

The filename template describing the observation/reference data.

Used by: tc_pairs_wrapper.py

Family: [filename_templates]

Default: Varies

REGION_LIST

A list of the regions of interest.

Used by: make_plots_wrapper.py, stat_analysis_wrapper.py

Family: [config]

Default: Varies

REGRID_TO_GRID

If supported, provide the output grid that is desired from the MET tool being used in the analysis.

Used by: make_plots_wrapper.py, point_stat_wrapper.py

Family: [config]

Default: Varies

REGRID_USING_MET_TOOL

Specify whether to regrid using the MET regrid_data_plane tool or not.

Acceptable values: yes/no

Used by: feature_util.py, met_util.py, series_by_init_wrapper.py, series_by_lead_wrapper.py

Family: [config]

Default: yes

RM_EXE

Specify the path to the Linux "rm" executable.

Used by: pb2nc_wrapper.py, point_stat_wrapper.py, series_by_lead_wrapper.py

Family: [exe]

Default: /path/to

RP_DIFF

This corresponds to the optional -rp_diff flag of the plot_TCMPR.R script (which is wrapped by tcmpr_plotter_wrapper.py). This a comma-separated list of thresholds to specify meaningful differences for the relative performance plot.

Used by: tcmpr_plotter_wrapper.py

Family: [config]

Default: Varies

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SAVE

Corresponds to the optional -save flag in plot_TCMPR.R (which is wrapped by tcmpr_plotter_wrapper.py). This is a yes/no value to indicate whether to save the image (yes).

Used by: tcmpr_plotter_wrapper.py

Family: [config]

Default: Varies

SAVE_DATA

Corresponds to the optional -save_data flag in plot_TCMPR.R (which is wrapped by tcmpr_plotter_wrapper.py). Indicates whether to save the filtered track data to a file instead of deleting it.

Used by: tcmpr_plotter_wrapper.py

Family: [config]

Default: Varies

SCATTER_X

Corresponds to the optional -scatter_x flag in plot_TCMPR.R (which is wrapped by tcmpr_plotter_wrapper.py). This is a comma-separated list of x-axis variable columns to plot.

Used by: tcmpr_plotter_wrapper.py

Family: [config]

Default: Varies

SCATTER_Y

Corresponds to the optional -scatter_y flag in plot_TCMPR.R (which is wrapped by tcmpr_plotter_wrapper.py). This is a comma-separated list of y-axis variable columns to plot.

Used by: tcmpr_plotter_wrapper.py
Family: [config]
Default: Varies

SCRUB_STAGING_DIR

Remove staging directory after METplus has completed running if set to True. Set to False to preserve data for subsequent runs.

Used by: master_metplus.py
Family: [config]
Default: False

SERIES

Corresponds to the optional -series flag in plot_TCMPR.R (which is wrapped by tcmpr_plotter_wrapper.py). This is the column whose unique values define the series on the plot, optionally followed by a comma-separated list of values, including: ALL, OTHER, and colon-separated groups.

Used by: tcmpr_plotter_wrapper.py
Family: [config]
Default: Varies

SERIES_ANALYSIS_BY_INIT_CONFIG_FILE

Specify the absolute path for the configuration file to use with the MET series_analysis tool by initialization time.

Used by: series_by_init_wrapper.py
Family: [config]
Default: Varies

SERIES_ANALYSIS_BY_LEAD_CONFIG_FILE

Specify the absolute path for the configuration file to use with the MET series_analysis tool by lead time.

Used by: series_by_lead_wrapper.py
Family: [config]
Default: Varies

SERIES_ANALYSIS_FILTER_OPTS

Filtering options to be applied during series analysis. Filter options are performed by invoking the MET tc_stat tool within the METplus wrapper.

Used by: series_by_lead_wrapper.py, series_by_init_wrapper.py
Family: [config]
Default: Varies

SERIES_CI

Corresponds to the optional -series_ci flag in plot_TCMPR.R (which is wrapped by tcmpr_plotter_wrapper.py). This is a list of true/false for confidence intervals. This list can be optionally followed by a comma-separated list of values, including ALL, OTHER, and colon-separated groups.

Used by: tcmpr_plotter_wrapper.py
Family: [config]
Default: Varies

SERIES_INIT_FILTERED_OUT_DIR

Specify the directory where filtered files will be written from the MET series_analysis tool when processing by initialization time.

Used by: series_by_init_wrapper.py
Family: [dir]
Default: Varies

SERIES_INIT_OUT_DIR

Specify the directory where files will be written from the MET series analysis tool when processing by initialization time.

Used by: series_by_init_wrapper.py
Family: [dir]
Default: Varies

SERIES_LEAD_FILTERED_OUT_DIR

Specify the directory where filtered files will be written from the MET series_analysis tool when processing by lead time.

Used by: series_by_lead_wrapper.py
Family: [dir]
Default: Varies

SERIES_LEAD_OUT_DIR

Specify the directory where files will be written from the MET series analysis tool when processing by lead time.

Used by: series_by_lead_wrapper.py
Family: [dir]
Default: Varies

SKILL_REF

This corresponds to the optional -skill_ref flag in plot_TCMPR.R (which is wrapped by tcmpr_plotter_wrapper.py). This is the identifier for the skill score reference.

Used by: tcmpr_plotter_wrapper.py
Family: [config]
Default: Varies

START_DATE

Specify the start data for the analysis time period. Format is YYYYYMMDDHH.

Used by: pb2nc_wrapper.py, point_stat_wrapper.py
Family: [config]
Default: Varies

STAGING_DIR

Directory to uncompress or convert data into for use in METplus.

Used by: All
Family: [dir]
Default: OUTPUT_BASE/stage

START_HOUR

Specify the start hour for the analysis time period. Format is HH.

Used by: pb2nc_wrapper.py, point_stat_wrapper.py
Family: [config]
Default: Varies

STAT_ANALYSIS_CONFIG

Specify the absolute path for the configuration file used with the MET stat_analysis tool.

Used by: stat_analysis_wrapper.py
Family: [config]
Default: Varies

STAT_ANALYSIS_LOOKIN_DIR

Specify the input directory where the MET stat_analysis tool will find input files.

Used by: stat_analysis_wrapper.py
Family: [dir]
Default: Varies

STAT_ANALYSIS_OUT_DIR

Specify the output directory where files will be written from the MET stat_analysis tool.

Used by: stat_analysis_wrapper.py
Family: [dir]
Default: Varies

STAT_FILES_INPUT_DIR

Specify the directory where stat files exist that plots can be generated from.

Used by: make_plots_wrapper.py
Family: [dir]
Default: Varies

STAT_LIST

Specify a list of statistics to be computed by the MET series_analysis tool.

Used by: series_by_init_wrapper.py, series_by_lead_wrapper.py
Family: [config]
Default: Varies

STORM_ID

The identifier of the storm(s) of interest.

Used by: cyclone_plotter_wrapper.py, met_util.py, tc_pairs_wrapper.py, tc_stat_wrapper.py
Family: [config]
Default: Varies

STORM_NAME

The name(s) of the storm of interest.

Used by: tc_pairs_wrapper.py, tc_stat_wrapper.py
Family: [config]
Default: Varies

SUBTITLE

The subtitle of the plot.

Used by: tcmpr_plotter_wrapper.py
Family: [config]
Default: Varies

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TCMPR_DATA

Provide the input directory for the track data for the TC Matched Pairs plotting tool.

Used by: tcmpr_plotter_wrapper.py
Family: [dir]

Default: Varies

TCMPR_PLOT_OUT_DIR
Provide the output directory where the TC Matched Pairs plotting tool will create files.

Used by: tcmpr_plotter_wrapper.py

Family: [dir]

Default: Varies

TC_PAIRS_CONFIG_FILE
Provide the absolute path to the configuration file for the MET tc_pairs tool.

Used by: tc_pairs_wrapper.py

Family: [config]

Default: Varies

TC_PAIRS_DIR
Specify the directory where the MET tc_pairs tool will write files.

Used by: tc_pairs_wrapper.py

Family: [dir]

Default: Varies

TC_PAIRS_FORCE_OVERWRITE
Specify whether to overwrite the output from the MET tc_pairs tool or not.

Acceptable values: yes/no

Used by: tc_pairs_wrapper.py

Family: [config]

Default: no

TC_STAT_AMODEL
Specify the AMODEL for the MET tc_stat tool.

Used by: tc_stat_wrapper.py

Family: [config]

Default: Varies

TC_STAT_BASIN
Specify the BASIN for the MET tc_stat tool.

Used by: tc_stat_wrapper.py

Family: [config]

Default: Varies

TC_STAT_BMODEL

Specify the BMODEL for the MET tc_stat tool.

Used by: tc_stat_wrapper.py

Family: [config]

Default: Varies

TC_STAT_CMD_LINE_JOB

Specify expression(s) that will be passed to the MET tc_stat tool via the command line.

Used by: tc_stat_wrapper.py

Family: [config]

Default: Varies

TC_STAT_COLUMN_STR_NAME

Specify the string names of the columns for stratification with the MET tc_stat tool.

Used by: tc_stat_wrapper.py

Family: [config]

Default: Varies

TC_STAT_COLUMN_STR_VAL

Specify the values for the columns set via the TC_STAT_COLUMN_STR_NAME option for use with the MET tc_stat tool.

Used by: tc_stat_wrapper.py

Family: [config]

Default: Varies

TC_STAT_COLUMN_THRESH_NAME

Specify the string names of the columns for stratification by threshold with the MET tc_stat tool.

Used by: tc_stat_wrapper.py

Family: [config]

Default: Varies

TC_STAT_COLUMN_THRESH_VAL

Specify the values used for thresholding the columns specified in the TC_STAT_COLUMN_THRESH_NAME option for use with the MET tc_stat tool.

Used by: tc_stat_wrapper.py

Family: [config]

Default: Varies

TC_STAT_CYCLONE

Specify the CYCLONE of interest for use with the MET tc_stat tool.

Used by: tc_stat_wrapper.py

Family: [config]

Default: Varies

TC_STAT_DESC

Specify the DESC option for use with the MET tc_stat tool.

Used by: tc_stat_wrapper.py

Family: [config]

Default: Varies

TC_STAT_INIT_BEG

Specify the beginning initialization time for stratification when using the MET tc_stat tool.

Acceptable formats: YYYYMMDD_HH, YYYYMMDD_HHmmss

Used by: tc_stat_wrapper.py

Family: [config]

Default: Varies

TC_STAT_INIT_END

Specify the ending initialization time for stratification when using the MET tc_stat tool.

Acceptable formats: YYYYMMDD_HH, YYYYMMDD_HHmmss

Used by: tc_stat_wrapper.py

Family: [config]

Default: Varies

TC_STAT_INIT_EXCLUDE

Specify the initialization times to exclude when using the MET tc_stat tool, via a comma separated list e.g.:

20141220_18, 20141221_00

Acceptable formats: YYYYMMDD_HH, YYYYMMDD_HHmmss

Used by: tc_stat_wrapper.py

Family: [config]

Default: Varies

TC_STAT_INIT_HOUR

The beginning hour (HH) of the initialization time of interest.

Used by: tc_stat_wrapper.py

Family: [config]

Default: Varies

TC_STAT_INIT_INCLUDE

Specify the initialization times to include when using the MET tc_stat tool, via a comma separated list e.g.:

20141220_00, 20141220_06, 20141220_12

Acceptable formats: YYYYMMDD_HH, YYYYMMDD_HHmmss

Used by: tc_stat_wrapper.py

Family: [config]

Default: Varies

TC_STAT_INIT_MASK

This corresponds to the INIT_MASK keyword in the MET tc_stat config file. For more information, please refer to Chapter 20 in the MET User's Guide.

Used by: tc_stat_wrapper.py

Family: [config]

Default: Varies

TC_STAT_INIT_STR_NAME

This corresponds to the INIT_STR_NAME keyword in the MET tc_stat config file. Please refer to Chapter 20 in the MET User's Guide for more details.

Used by: tc_stat_wrapper.py

Family: [config]

Default: Varies

TC_STAT_INIT_STR_VAL

This corresponds to the INIT_STR_VAL keyword in the MET tc_stat config file. Please refer to Chapter 20 in the MET User's Guide for more information.

Used by: tc_stat_wrapper.py

Family: [config]

Default: Varies

TC_STAT_INPUT_DIR

Specify the input directory where the MET tc_stat tool will look for files.

Used by: tc_stat_wrapper.py

Family: [dir]

Default: Varies

TC_STAT_JOBS_LIST

Specify expressions for the MET tc_stat tool to execute.

Used by: tc_stat_wrapper.py

Family: [config]

Default: Varies

TC_STAT_LANDFALL

Specify whether only those points occurring near landfall should be retained when using the MET tc_stat tool.

Acceptable values: True/False

Used by: tc_stat_wrapper.py

Family: [config]

Default: False

TC_STAT_LANDFALL_BEG

Specify the beginning of the landfall window for use with the MET tc_stat tool.

Acceptable formats: HH, HHmmss

Used by: tc_stat_wrapper.py

Family: [config]

Default: -24

TC_STAT_LANDFALL_END

Specify the end of the landfall window for use with the MET tc_stat tool.

Acceptable formats: HH, HHmmss

Used by: tc_stat_wrapper.py

Family: [config]

Default: Varies

TC_STAT_LEAD

Specify the lead times to stratify by when using the MET tc_stat tool.

Acceptable formats: HH, HHmmss

Used by: tc_stat_wrapper.py

Family: [config]

Default: Varies

TC_STAT_LEAD_REQ

Specify the LEAD_REQ when using the MET tc_stat tool.

Used by: tc_stat_wrapper.py

Family: [config]

Default: Varies

TC_STAT_MATCH_POINTS

Specify whether only those points common to both the ADECK and BDECK tracks should be written out or not when using the MET tc_stat tool.

Acceptable values: True/False

Used by: tc_stat_wrapper.py

Family: [config]

Default: false

TC_STAT_OUTPUT_DIR

Specify the output directory where the MET tc_stat tool will write files.

Used by: tc_stat_wrapper.py

Family: [dir]

Default: Varies

TC_STAT_RUN_VIA

Specify the method for running the MET tc_stat tool.

Acceptable values: CONFIG

If left blank (unset), tc_stat will run via the command line.

Used by: tc_stat_wrapper.py

Family: [config]

Default: CONFIG

TC_STAT_STORM_ID

Set the STORM_ID(s) of interest with the MET tc_stat tool.

Used by: tc_stat_wrapper.py

Family: [config]

Default: Varies

TC_STAT_STORM_NAME

Set the STORM_NAME for use with the MET tc_stat tool.

Used by: tc_stat_wrapper.py

Family: [config]

Default: Varies

TC_STAT_TRACK_WATCH_WARN

Specify which watches and warnings to stratify over when using the MET tc_stat tool.

Acceptable values: HUWARN, HUWATCH, TSWARN, TSWATCH, ALL

If left blank (unset), no stratification will be done.

Used by: tc_stat_wrapper.py

Family: [config]

Default: Varies

TC_STAT_VALID_BEG

Specify a comma separated list of beginning valid times to stratify with when using the MET tc_stat tool.

Acceptable formats: YYYYMMDD_HH, YYYYMMDD_HHmmss

Used by: tc_stat_wrapper.py

Family: [config]

Default: Varies

TC_STAT_VALID_END

Specify a comma separated list of ending valid times to stratify with when using the MET tc_stat tool.

Acceptable formats: YYYYMMDD_HH, YYYYMMDD_HHmmss

Used by: tc_stat_wrapper.py

Family: [config]

Default: Varies

TC_STAT_VALID_EXCLUDE

Specify a comma separated list of valid times to exclude from the stratification with when using the MET tc_stat tool.

Acceptable formats: YYYYMMDD_HH, YYYYMMDD_HHmmss

Used by: tc_stat_wrapper.py

Family: [config]

Default: Varies

TC_STAT_VALID_HOUR

This corresponds to the VALID_HOUR keyword in the MET tc_stat config file. For more information, please refer to Chapter 20 of the MET User's Guide.

Used by: tc_stat_wrapper.py
Family: [config]
Default: Varies

TC_STAT_VALID_INCLUDE

Specify a comma separated list of valid times to include in the stratification with when using the MET tc_stat tool.

Acceptable formats: YYYYMMDD_HH, YYYYMMDD_HHmmss

Used by: tc_stat_wrapper.py
Family: [config]
Default: Varies

TC_STAT_VALID_MASK

This corresponds to the VALID_MASK in the MET tc_stat config file. Please refer to Chapter 20 of the MET User's Guide for more information.

Used by: tc_stat_wrapper.py
Family: [config]
Default: Varies

TC_STAT_WATER_ONLY

Specify whether to exclude points where the distance to land is $<= 0$. If set to TRUE, once land is encountered the remainder of the forecast track is not used for the verification, even if the track moves back over water.

Acceptable values: true/false

Used by: tc_stat_wrapper.py
Family: [config]
Default: Varies

TIME_METHOD

Specify which time method to use with the MET pb2nc and point_stat tools.

Acceptable values: BY_VALID, BY_INIT

Used by: pb2nc_wrapper.py, point_stat_wrapper.py
Family:

Default:

TIME_SUMMARY_BEG

Specify the starting time of the summary when using the MET pb2nc tool.

Acceptable formats: HHMMSS

Used by: pb2nc_wrapper.py
Family: [config]
Default: 000000

TIME_SUMMARY_END

Specify the ending time of the summary when using the MET pb2nc tool.

Acceptable formats: HHMMSS

Used by: pb2nc_wrapper.py
Family: [config]
Default: 235959

TIME_SUMMARY_FLAG

Specify whether to receive a time summary from the MET pb2nc tool or not.

Acceptable values: True/False

Used by: pb2nc_wrapper.py
Family: [config]
Default: False

TIME_SUMMARY_TYPES

Specify a comma separated list of time summary types to receive from the MET pb2nc tool.

Used by: pb2nc_wrapper.py
Family: [config]
Default: Varies

TIME_SUMMARY_VAR_NAMES

Specify a comma separated list of time summary variable names to receive from the MET pb2nc tool.

Used by: pb2nc_wrapper.py
Family: [config]
Default: Varies

TITLE

Specify a title string for the TC Matched Pairs plotting tool.

Used by: tcmpr_plotter_wrapper.py
Family: [config]
Default: Varies

TMP_DIR
Specify the path to a temporary directory where the user has write permissions.

Used by: extract_tiles_wrapper.py, pb2nc_wrapper.py, point_stat_wrapper.py, series_by_init_wrapper.py, series_by_lead_wrapper.py, tc_stat_wrapper.py
Family: [dir]
Default: Varies

TOP_LEVEL_DIRS
Specify whether to use top-level directories when using the MET tc_pairs utility or not.

Acceptable values: yes/no

Used by: tc_pairs_wrapper.py
Family: [config]
Default: no

TRACK_DATA_DIR
Specify the directory where track data are located for use with the MET tc_pairs tool.

Used by: tc_pairs_wrapper.py
Family: [dir]
Default: Varies

TRACK_DATA_MOD_FORCE_OVERWRITE
Specify whether to force an overwrite of the track data or not.

Acceptable values: yes/no

Used by: tc_pairs_wrapper.py
Family: [config]
Default: no

TRACK_DATA_SUBDIR_MOD
Specify the sub-directory where modified track data files are stored for use with the MET tc_pairs tool.

Used by: tc_pairs_wrapper.py
Family: [dir]
Default: Varies

TRACK_TYPE
Specify the track type to filter by when using the MET tc_pairs tool.

Used by: tc_pairs_wrapper.py
Family: [config]
Default: Varies

TR_EXE
Specify the path to the Linux "tr" executable.

Used by: pb2nc_wrapper.py, point_stat_wrapper.py
Family: [exe]
Default: /path/to

3.4.21   U

3.4.22   V

VALID_BEG
Specify a begin time for valid times for use in the analysis.

Acceptable formats: YYYYMM[DD[_HH]]

Used by: command_builder.py, make_plots_wrapper.py, master_metplus.py, stat_analysis_wrapper.py,
tc_pairs_wrapper.py, tc_stat_wrapper.py
Family: [config]
Default: Varies

VALID_BEG_HOUR
Specify a beginning hour for valid times for use in the analysis.

Acceptable formats: HH

Used by: make_plots_wrapper.py, stat_analysis_wrapper.py
Family: [config]
Default: Varies

VALID_END
Specify an end time for valid times for use in the analysis.

Acceptable formats: controlled via VALID_TIME_FMT

Used by: command_builder.py, make_plots_wrapper.py, master_metplus.py, stat_analysis_wrapper.py, tc_pairs_wrapper.py, tc_stat_wrapper.py

Family: [config]

Default: Varies

VALID_END_HOUR

Specify an end hour for valid times for use in the analysis.

Acceptable formats: controlled via VALID_TIME_FMT

Used by: make_plots_wrapper.py, stat_analysis_wrapper.py

Family: [config]

Default: Varies

VALID_INCREMENT

Specify the time increment for valid times for use in the analysis.

Acceptable formats: seconds

Used by: command_builder.py, make_plots_wrapper.py, master_metplus.py, stat_analysis_wrapper.py, tc_stat_wrapper.py

Family: [config]

Default: Varies

VALID_TIME_FMT

Specify a strftime formatting string for use with VALID_BEG and VALID_END.

Used by: command_builder.py, master_metplus.py

Family: [config]

Default: Varies

VAR_LIST

Specify a comma separated list of variables to be used in the analysis.

Used by: feature_util.py, pb2nc_wrapper.py, series_by_init_wrapper.py, series_by_lead_wrapper.py

Family: [config]

Default: Varies

VERIFICATION_GRID

Specify the absolute path to a file containing information about the desired output grid from the MET regrid_data_plane tool.

Used by: regrid_data_plane_wrapper.py

Family: [config]

Default: Varies

VERIF_CASE

Specify a string identifying the verification case being performed.

Used by: make_plots_wrapper.py, stat_analysis_wrapper.py
Family: [config]
Default: Varies

VERIF_TYPE

Specify a string describing the type of verification being performed.

Used by: make_plots_wrapper.py, stat_analysis_wrapper.py
Family: [config]
Default: Varies

VERTICAL_LOCATION

Specify the vertical location desired when using the MET pb2nc tool.

Used by: pb2nc_wrapper.py
Family: [config]
Default: Varies

3.4.23   W

WAVE_NUM_BEG_LIST

Specify a comma separated list of desired beginning wave numbers.

Used by: make_plots_wrapper.py, stat_analysis_wrapper.py
Family: [config]
Default: Varies

WAVE_NUM_END_LIST

Specify a comma separated list of desired ending wave numbers.

Used by: make_plots_wrapper.py, stat_analysis_wrapper.py
Family: [config]
Default: Varies

WGRIB2

Specify the path to the "wgrib2" executable.

Used by: feature_util.py, pb2nc_wrapper.py, point_stat_wrapper.py
Family: [exe]

Default: /path/to

3.4.24   X

XLAB

Specify the x-axis label when using the TC Matched Pairs plotting tool.

Used by: tcmpr_plotter_wrapper.py
Family: [config]
Default: Varies

XLIM

Specify the x-axis limit when using the TC Matched Pairs plotting tool.

Used by: tcmpr_plotter_wrapper.py
Family: [config]
Default: Varies

3.4.25   Y

YLAB

Specify the y-axis label when using the TC Matched Pairs plotting tool.

Used by: tcmpr_plotter_wrapper.py
Family: [config]
Default: Varies

YLIM

Specify the y-axis limit when using the TC Matched Pairs plotting tool.

Used by: tcmpr_plotter_wrapper.py
Family: [config]
Default: Varies

3.4.26   Z

3.5   User Defined Config

You can define your own custom config variables that will be set as environment variables when METplus is run. MET config files can read environment variables, so this is a good way to customize information that is read by those files. To create add a custom config variable, add a section to one of your METplus config files called [user_env_vars]. Under this header, add as many variables as you'd like. For example, if you added the following to your METplus config:

[user_env_vars]
VAR_NAME = some_text_for_feb_1_1987_run

and you added the following to a MET config file that is used:

output_prefix = ${VAR_NAME}

then at run time, the MET application will be run with the configuration:

output_prefix = some_text_for_feb_1_1987_run

You can also reference other variables in the METplus config file. For example:

[config]
INIT_BEG = 1987020104
...
[user_env_vars]
USE_CASE_TIME_ID = {INIT_BEG}

This is the equivalent of calling

export USE_CASE_TIME_ID=1987020104

at the beginning of your METplus run. You can access the variable in the MET config file with ${USE_CASE_TIME_ID}.

References

Alberson, S.D., 1998: Five-day Tropical cyclone track forecasts in the North Atlantic Basin. *Weather & Forecasting*, 13, 1005-1015.

Bradley, A.A., S.S. Schwartz, and T. Hashino, 2008: Sampling Uncertainty and Confidence Intervals for the Brier Score and Brier Skill Score. *Weather and Forecasting*, 23, 992-1006.

Brill, K. F., and F. Mesinger, 2009: Applying a general analytic method for assessing bias sensitivity to bias-adjusted threat and equitable threat scores. *Weather and Forecasting*, 24, 1748–1754.

Brown, B.G., R. Bullock, J. Halley Gotway, D. Ahijevych, C. Davis, E. Gilleland, and L. Holland, 2007: Application of the MODE object-based verification tool for the evaluation of model precipitation fields. *AMS 22nd Conference on Weather Analysis and Forecasting and 18th Conference on Numerical Weather Prediction*, 25-29 June, Park City, Utah, American Meteorological Society (Boston), Available at `http://ams.confex.com/ams/pdfpapers/124856.pdf`.

Bullock, R., T. Fowler, and B. Brown, 2016: Method for Object-Based Diagnostic Evaluation. NCAR Tech. Note NCAR/TN-532+STR, 66 pp.

Candille, G., and O. Talagrand, 2008: Impact of observational error on the validation of ensemble prediction systems. *Q. J. R. Meteorol. Soc.* 134: 959–971.

Casati, B., G. Ross, and D. Stephenson, 2004: A new intensity-scale approach for the verification of spatial precipitation forecasts. *Meteorol. Appl.* 11, 141-154.

Davis, C.A., B.G. Brown, and R.G. Bullock, 2006a: Object-based verification of precipitation forecasts, Part I: Methodology and application to mesoscale rain areas. *Monthly Weather Review*, 134, 1772-1784.

Davis, C.A., B.G. Brown, and R.G. Bullock, 2006b: Object-based verification of precipitation forecasts, Part II: Application to convective rain systems. *Monthly Weather Review*, 134, 1785-1795.

Dawid, A.P., 1984: Statistical theory: The prequential approach. *J. Roy. Stat. Soc*, A147, 278-292.

Ebert, E.E., 2008: Fuzzy verification of high-resolution gridded forecasts: a review and proposed framework. *Meteorological Applications*, 15, 51-64.

Eckel, F. A., M.S. Allen, M. C. Sittel, 2012: Estimation of Ambiguity in Ensemble Forecasts. *Wea. Forecasting*, 27, 50-69. doi: `http://dx.doi.org/10.1175/WAF-D-11-00015.1`

Efron, B. 2007: Correlation and large-scale significance testing. *Journal of the American Statistical Association*, 102(477), 93-103.

Gilleland, E., 2010: Confidence intervals for forecast verification. *NCAR Technical Note* NCAR/TN-479+STR, 71pp.

Gneiting, T., A. Westveld, A. Raferty, and T. Goldman, 2004: *Calibrated Probabilistic Forecasting Using Ensemble Model Output Statistics and Minimum CRPS Estimation.* Technical Report no. 449, Department of Statistics, University of Washington. [Available online at `http://www.stat.washington.edu/www/research/reports/`]

Hamill, T. M., 2001: Interpretation of rank histograms for verifying ensemble forecasts. *Mon. Wea. Rev.*, 129, 550-560.

Hogan, R., E. O'Connor, and A. Illingworth, 2009: Verification of cloud-fraction forecasts. *Quart. Jour. Roy. Meteorol. Soc.*, 135, 1494-1511.

Jolliffe, I.T., and D.B. Stephenson, 2012: *Forecast verification. A practitioner's guide in atmospheric science.* Wiley and Sons Ltd, 240 pp.

Knaff, J.A., M. DeMaria, C.R. Sampson, and J.M. Gross, 2003: Statistical, Five-Day Tropical Cyclone Intensity Forecasts Derived from Climatology and Persistence."*Weather & Forecasting,*" Vol. 18 Issue 2, p. 80-92.

Mason, S. J., 2004: On Using "Climatology" as a Reference Strategy in the Brier and Ranked Probability Skill Scores. *Mon. Wea. Rev.*, 132, 1891–1895.

Mittermaier, M., 2013: A strategy for verifying near-convection-resolving model forecasts at observing sites. Wea. Forecasting, 29, 185-204.

Mood, A. M., F. A. Graybill and D. C. Boes, 1974: *Introduction to the Theory of Statistics*, McGraw-Hill, 299-338.

Murphy, A.H., and R.L. Winkler, 1987: A general framework for forecast verification. *Monthly Weather Review*, 115, 1330-1338.

Roberts, N.M., and H.W. Lean, 2008: Scale-selective verification of rainfall accumulations from high-resolution forecasts of convective events. *Monthly Weather Review*, 136, 78-97.

Saetra O., H. Hersbach, J-R Bidlot, D. Richardson, 2004: Effects of observation errors on the statistics for ensemble spread and reliability. *Mon. Weather Rev.* 132: 1487–1501.

Santos C. and A. Ghelli, 2012: Observational probability method to assess ensemble precipitation forecasts. *Q. J. R. Meteorol. Soc.* 138: 209–221.

Stephenson, D.B., 2000: Use of the "Odds Ratio" for diagnosing forecast skill. *Weather and Forecasting*, 15, 221-232.

Stephenson, D.B., B. Casati, C.A.T. Ferro, and C.A. Wilson, 2008: The extreme dependency score: A non-vanishing measure for forecasts of rare events. *Meteor. Appl.* 15, 41-50.

Weniger, M., F. Kapp, and P. Friederichs, 2016: Spatial Verification Using Wavelet Transforms: A Review. *Quarterly Journal of the Royal Meteorological Society*, 143, 120-136.

Wilks, D.S. 2010: Sampling distributions of the Brier score and Brier skill score under serial dependence. Q.J.R. Meteorol. Soc., 136, 2109–2118. doi:10.1002/qj.709

Wilks, D., 2011: *Statistical methods in the atmospheric sciences.* Elsevier, San Diego.

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