

Interactive 3-D data visualization of NAME particle simulation data using Met3D

To visualize NAME output in 3-D using the visualization tools Met3D, the default NAME output has to be converted to a NetCDF file that can be processed by Met.3D. This document provides a collection of Minimal Examples / code snippets for converting different types of default NAME simulation output to a format that can be processed by Met3D. Also, it contains a collection of links to existing Met3D documentation that provides step-by-step guides and examples for how to conduct interactive 3-D visual data analysis of gridded meteorological data. These guides can be directly applied to the NAME / UM data once converted to NetCDF files

The minimal examples for data conversion can be found in /Data Conversion. Please note that the NAME simulation framework provides great flexibility regarding the type and format of simulation output. Developing generic data conversion routines would therefore require substantial work and constant maintenance. Instead, we provide a set of simple minimal examples that may easily be adapted.

The folder contains scripts for converting the following NAME input/output data

- 3-D gridded meteorological data from the UKMOs UM
- Topography
- 2-D time-dependent soil moisture
- NAME particle trajectories including meteorological data at particle positions
- 3-D NAME particle mass concentration field

After conversion, the NAME/UM data can be loaded into Met.3D for explorative 3-D visual data analyses. Links to Met.3D documentation including introductory tutorials and details about selected visualization techniques.

- <https://collaboration.cen.uni-hamburg.de/display/Met3D/User+documentation>
- <https://met3d.wavestoweather.de/met-3d.html>

Introductory Tutorial

- https://collaboration.cen.uni-hamburg.de/download/attachments/23134497/Met3D_Introductory_Tutorial_v20190320.pdf?api=v2

Supported data formats & loading of data into Met3D

- <https://collaboration.cen.uni-hamburg.de/display/Met3D/Supported+data+and+file+formats>
- <https://collaboration.cen.uni-hamburg.de/display/Met3D/Loading+data+into+Met.3D>

Rendering Terrain

- <https://collaboration.cen.uni-hamburg.de/display/Met3D/Surface+topography>

Trajectory Visualization

- <https://collaboration.cen.uni-hamburg.de/display/Met3D/Visualizing+3D+trajectory+data>
- <https://collaboration.cen.uni-hamburg.de/display/Met3D/Trajectory+actor>

3-D gridded meteorological data

- <https://collaboration.cen.uni-hamburg.de/pages/viewpage.action?pageId=23134556>