Flow-Dependent, Cross-Timescale Model Diagnostics Documentation

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The flow-dependent model diagnostics compares daily atmospheric circulation pattern, or weather types, characteristics in reanalyses and models to analyze misrepresented physical processes related to spatiotemporal systematic errors in those models. Relationships between these biases and climate teleconnections (e.g., SST patterns, ENSO, MJO, etc.) can be explored in different models.

Version & Contact info

- Version/revision information: version 1 (01/02/2021)

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Required programming language and libraries

Programming language: Python3

Python Libraries used: Xarray, numpy, pandas, sklearn, cartopy, matplotlib, PyWR

Required model output variables

Geopotential height anomalies at 500 hPa

Rainfall

2-m temperature

References

Muñoz, Á. G., Yang, X., Vecchi, G. A., Robertson, A. W., & Cooke, W. F. (2017): PA Weather-Type-Based Cross-Time-Scale Diagnostic Framework for Coupled Circulation Models. *Journal of Climate*, **30** (22), 8951–8972, doi:10.1175/JCLI-D-17-0115.1.