

Partnership with global and regional modeling communities (WG2)

Chiara Cagnazzo (Italy), c.cagnazzo@isac.cnr.it;

Jessica Neu (USA), Jessica.L.Neu@jpl.nasa.gov;

Mian Chin (USA), mian.chin@nasa.gov

Objectives:

Around 25 people in the mailing list

- Establish connections between the ACAM community and the global and regional modeling communities
- Foster the use of existing, state-of-the-art modeling tools for ACAM-related studies
- Coordinate modeling and data analysis activities focused on ACAM topics

List of ongoing international relevant Projects: **CCMI, AeroCom, AerChemMIP, CMIP6, HTAP, MICS-Asia, StratoClim, SSiRC, PRIMAVERA, C3S**

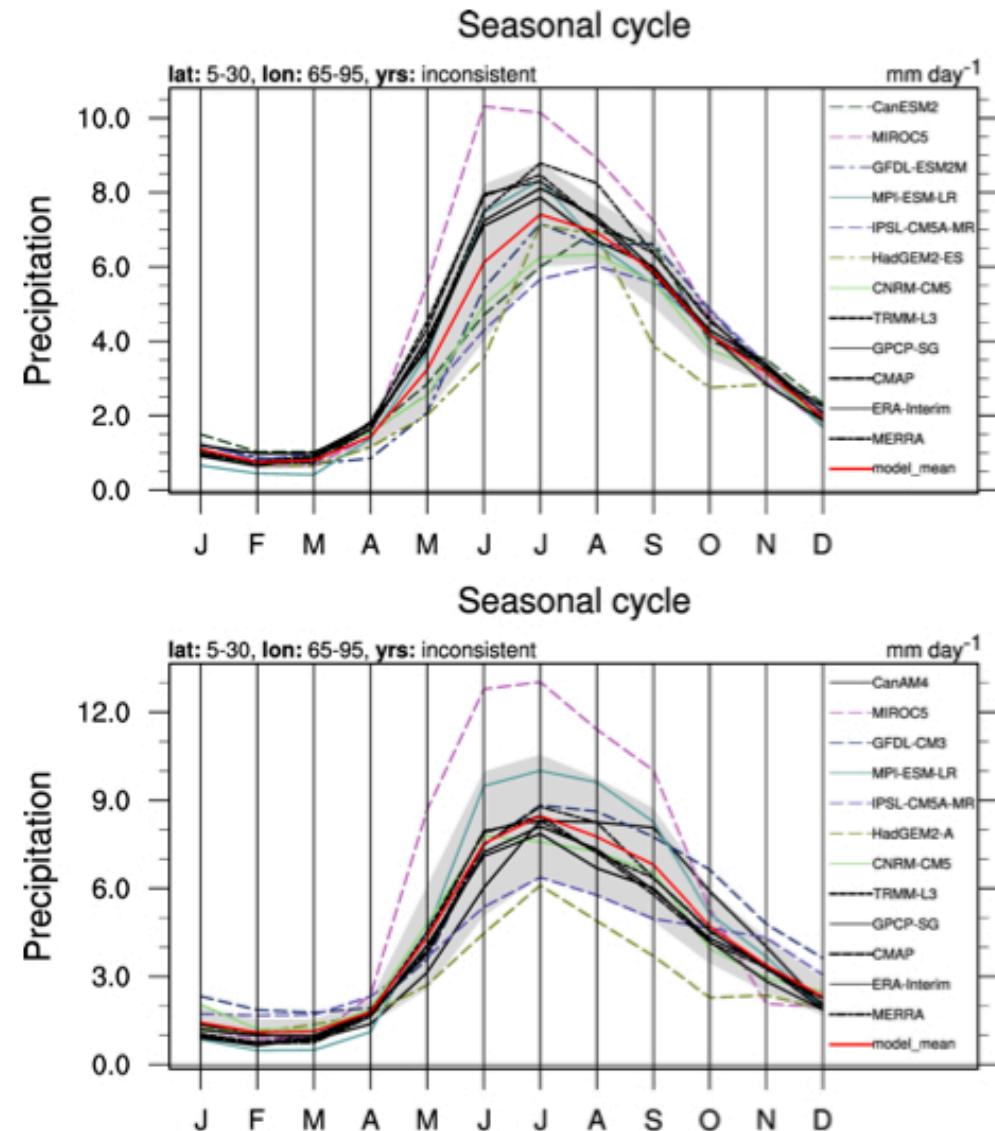
Create an ACAM-Model-Intercomparison Project (ACAM-MIP)

1. Existing output → propose common analyses – strength: MultiModel Approach
2. Additional output (e.g. Tropopause height in CMIPs...)
3. Additional simulations (to sub-groups of models...)

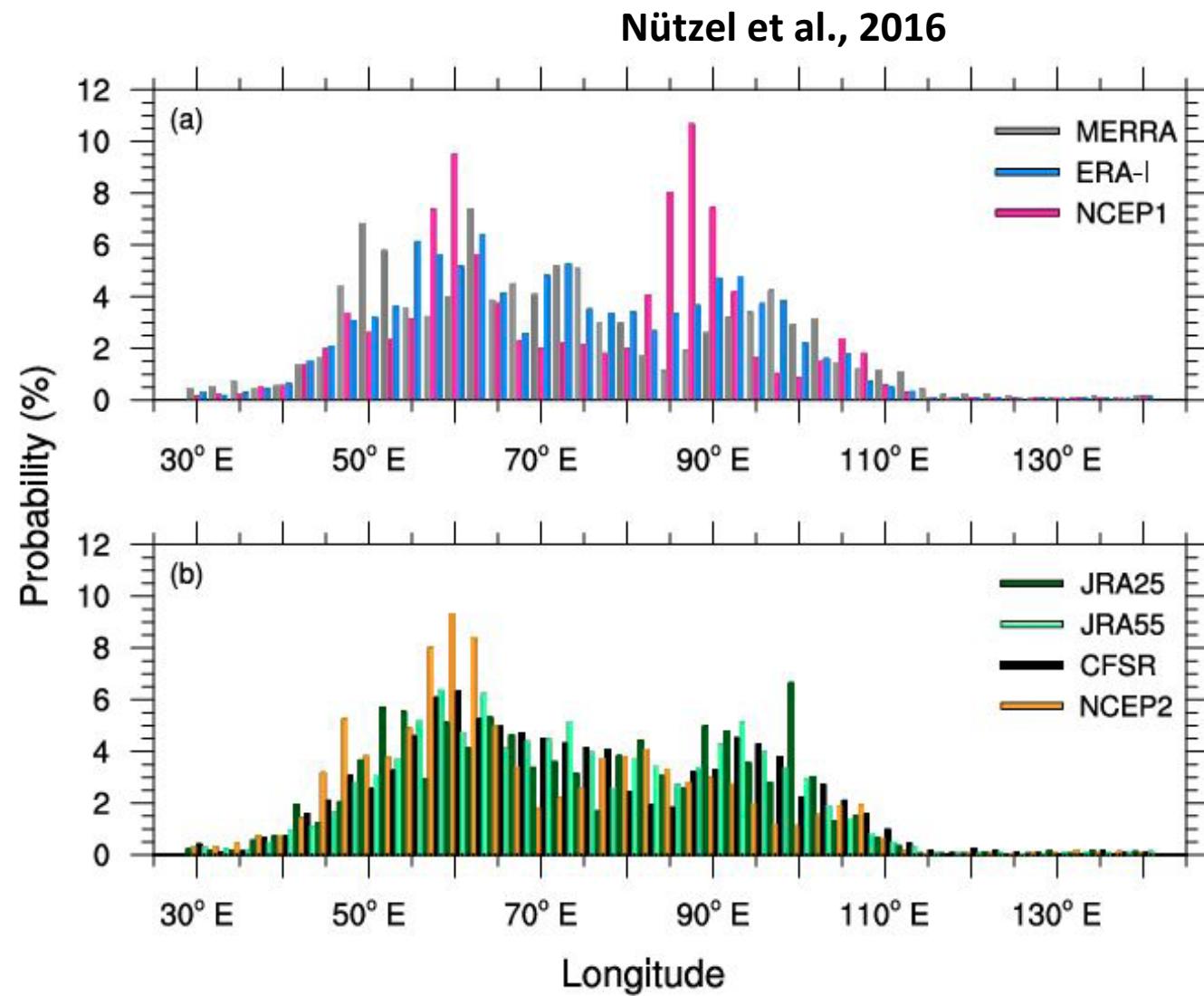
Define a common set of diagnostics and metrics linking different typologies of observations and Global Models for model evaluation, model improvements, interpretation of model predictions

1. Collection of existing
2. Developing new diagnostics
3. Diagnostics → Metrics

1. Collection of existing, example from ESMValTool :



2. Developing new diagnostics, example



PDF of The daily location of the SAH centre at 100 hPa 1979-2014 for reanalyses

2. Developing new diagnostics: example from StratoCLIM

Group 1: Dynamical Asian Monsoon definition, behavior and variability

1.1 Title of the diagnostic: Stationary wave response to convection

1.2 Title of the diagnostic: Tropopause variability and the Anticyclone variations

**1.3 Title of the diagnostic: geometric identification of east/west
AA migration and its bimodality...**

Group 2: Transport pathways

2.1 Title of the diagnostic: Horizontal transport pathways

2.2 Title of the diagnostic: Mixing Diagnostics

2.3 Title of the diagnostic: Impact of Convection on the UTS

Anything about the AA boundaries ?

Anything specific about the H2O ?

Group 3:

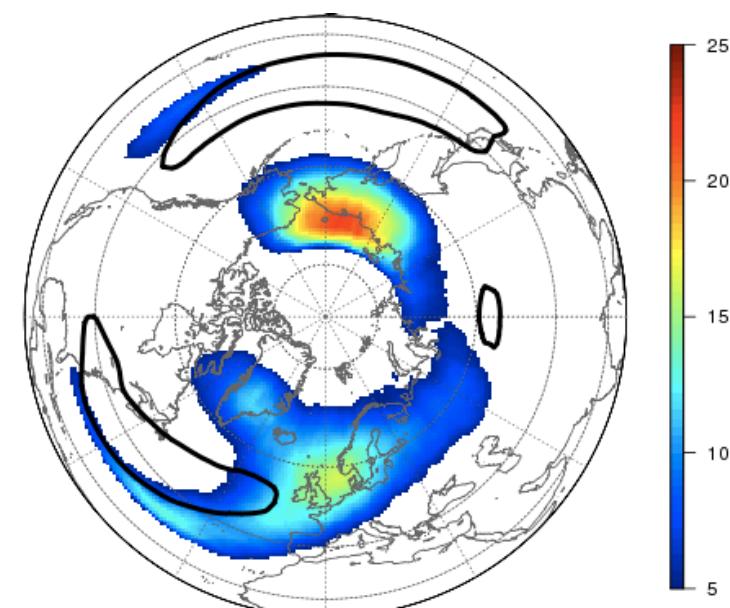
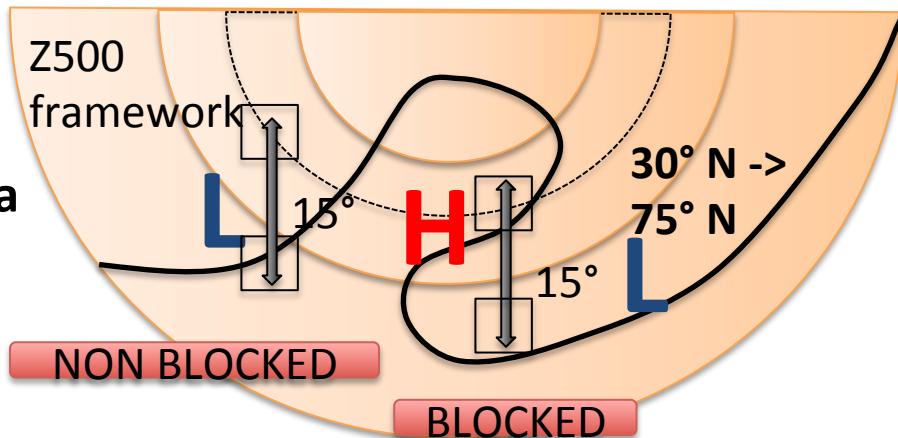
Composition and chemistry: mostly about how the dynamics of the asian monsoon anticyclone affects the chemical composition of the UTS and viceversa.

3.1 Title of the diagnostic: Tracer-tracer correlation diagnostics (e.g. H2O versus O3), CO tracer for convection...

3.2 Title of the diagnostic: Monsoon dynamics and aerosol interactions

3. Diagnostics → Metrics: Blocking

- **Reversal of the geopotential height gradient** at 500hPa, following Tibaldi and Molteni (1990) but **applying it to a full set of latitudes (30-75N)**
- Supplementary constraint to require minimum longitudinal extension and **5-day persistence** (Eulerian index).
- Possibility to evaluate blocking **duration**, intensity and wave breaking orientation.
- Metric : goodness of the index PDF / Spatial pattern



Ref: Davini P. et al. (2012) J. of Climate,
25, DOI: 10.1175/JCLI-D-12-00032.1

Communicate with other WGs on data sharing and in-situ/remote sensing data analysis, data needs