Update on interfacing the CLIVAR ENSO package with ESMValTool

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Task 3.2: New standard on scientific provenance of model evaluation = « science / IT interface »

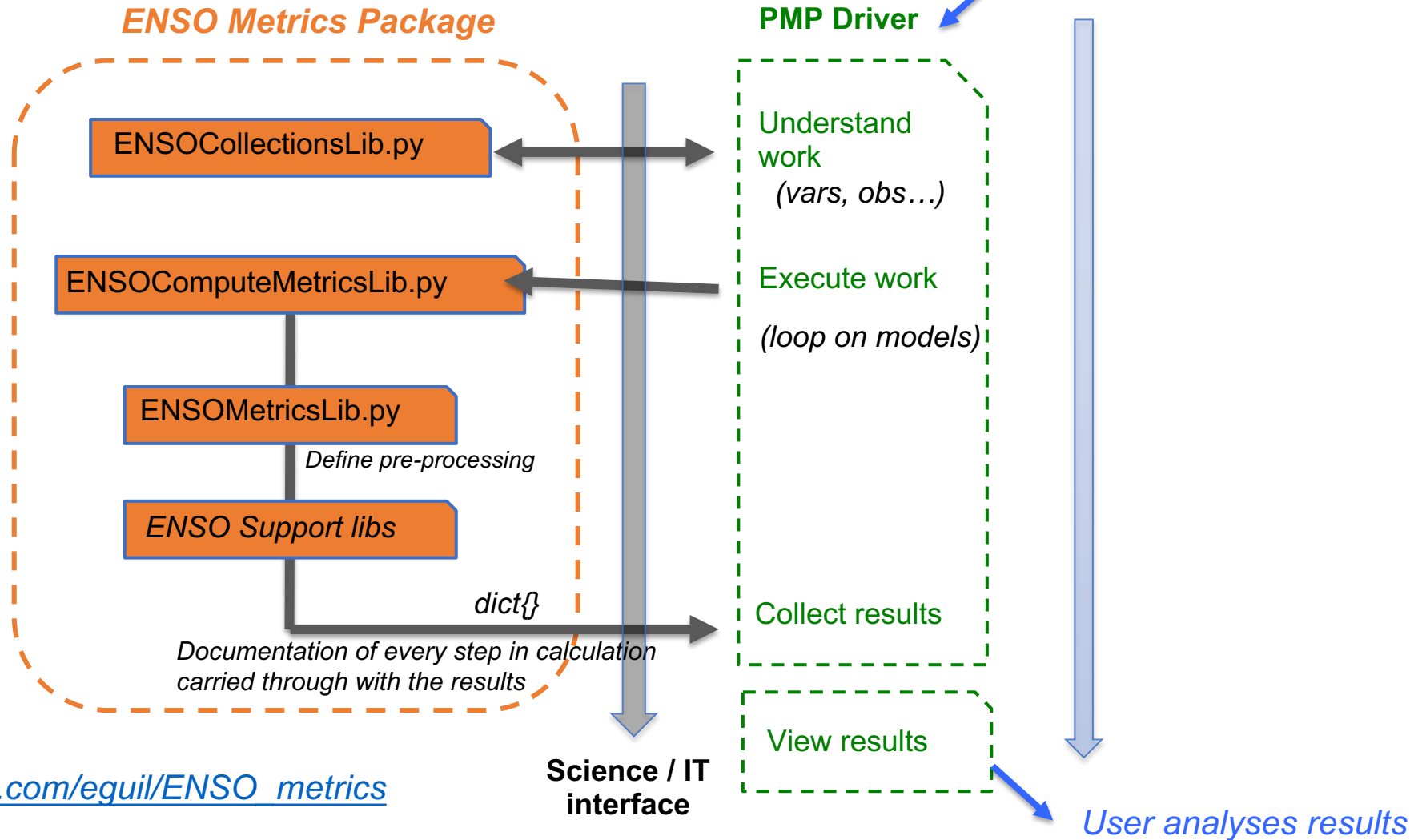Use CLIVAR ENSO metrics pilot effort as a starting point

- Used PMP as driver

- Documented interface (done by Yann in code and on github + paper in revision in BAMS)

- Started exploration of ENSO metrics integration in ESMValTool (Javier)

- Both physical (NA2/T3.2) and technical (NA4/T5) considerations to be explored
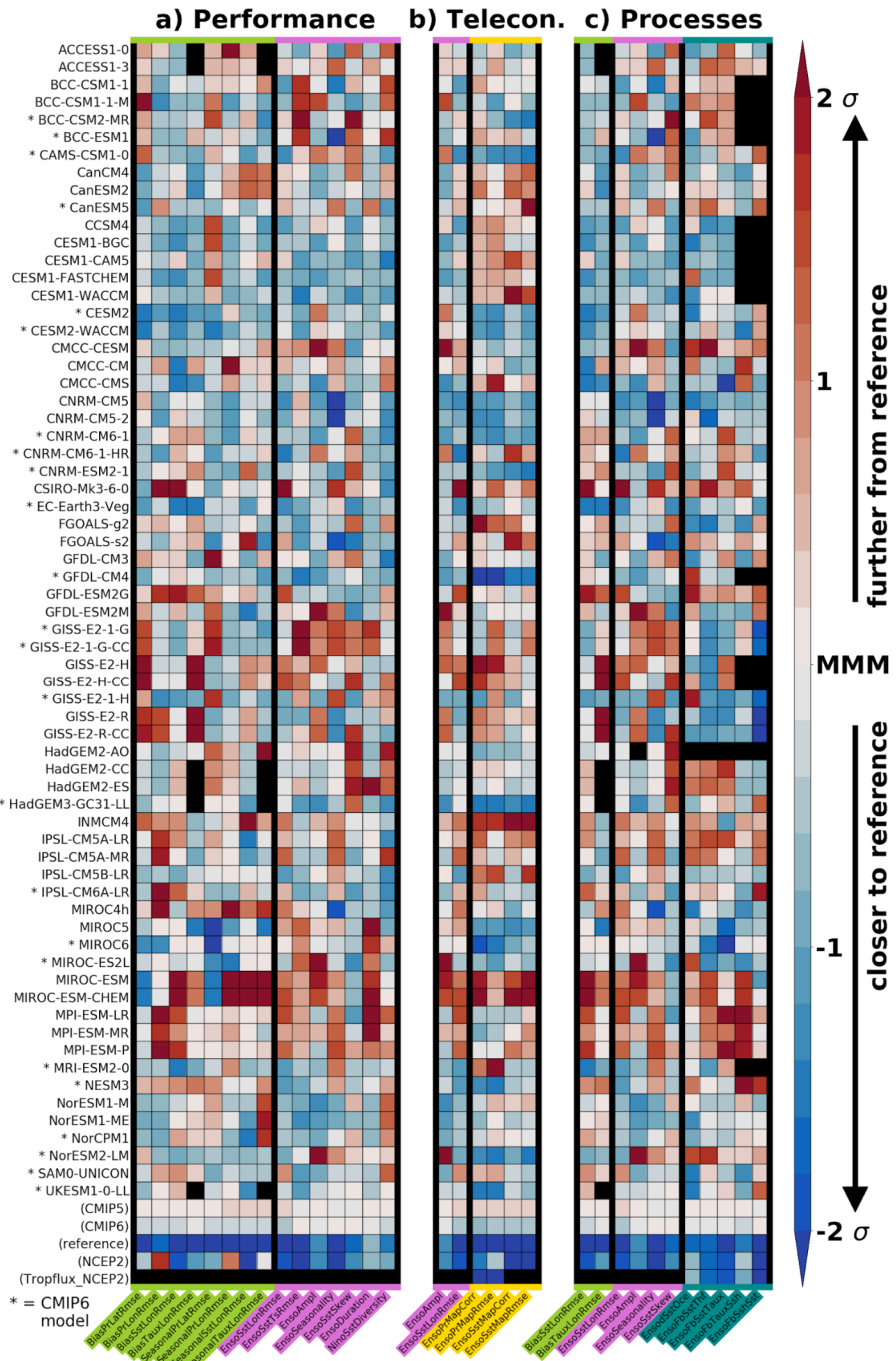
Structure of pilot ENSO package

Engage with an IT infrastructure (driver), here PMP

User chooses metric collection and models

ENSO Metrics Package

PMP Driver

ENSOCollectionsLib.py

Understand work
  (vars, obs…)

ENSOComputeMetricsLib.py

Execute work

(loop on models)

ENSOMetricsLib.py

Define pre-processing

ENSO Support libs

dict{}

Collect results

Documentation of every step in calculation carried through with the results

Science / IT interface

View results

User analyses results

https://github.com/eguil/ENSO_metrics
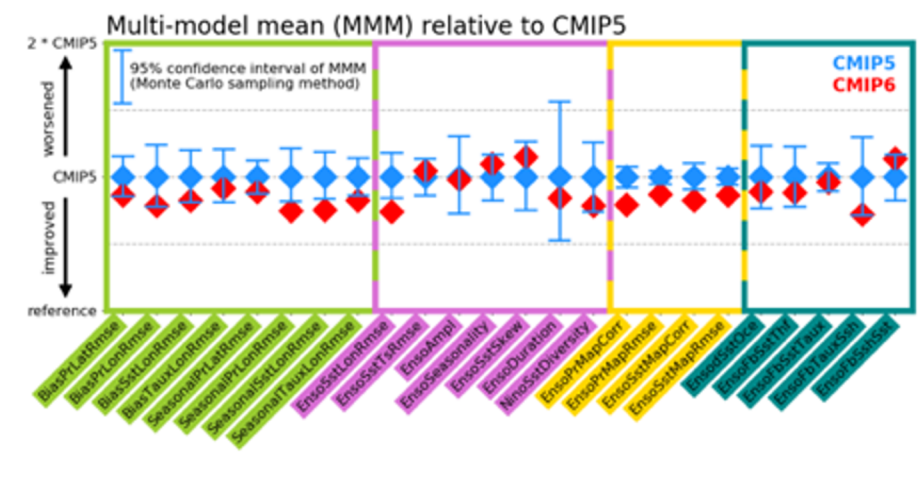
a) Performance   b) Telecon.   c) Processes

Paper in revision in BAMS: "Evaluating El Niño in climate models with the CLIVAR 2020 ENSO metrics package" by Yann Planton et al.
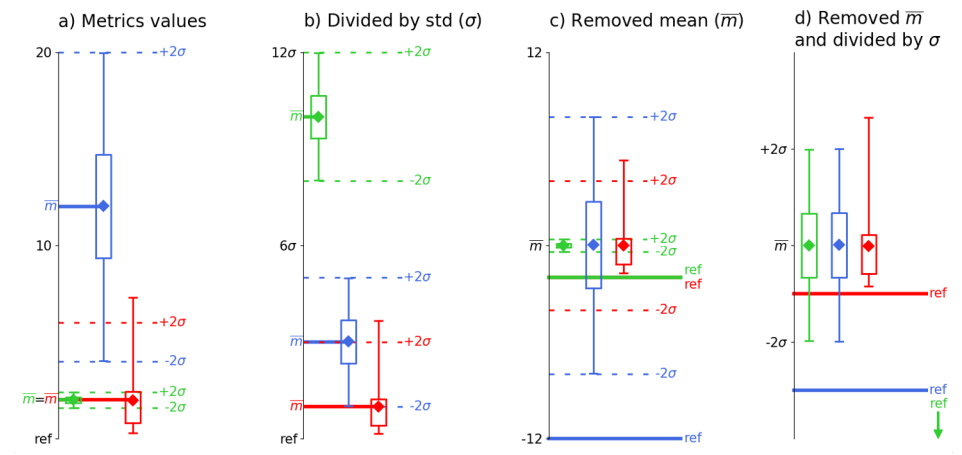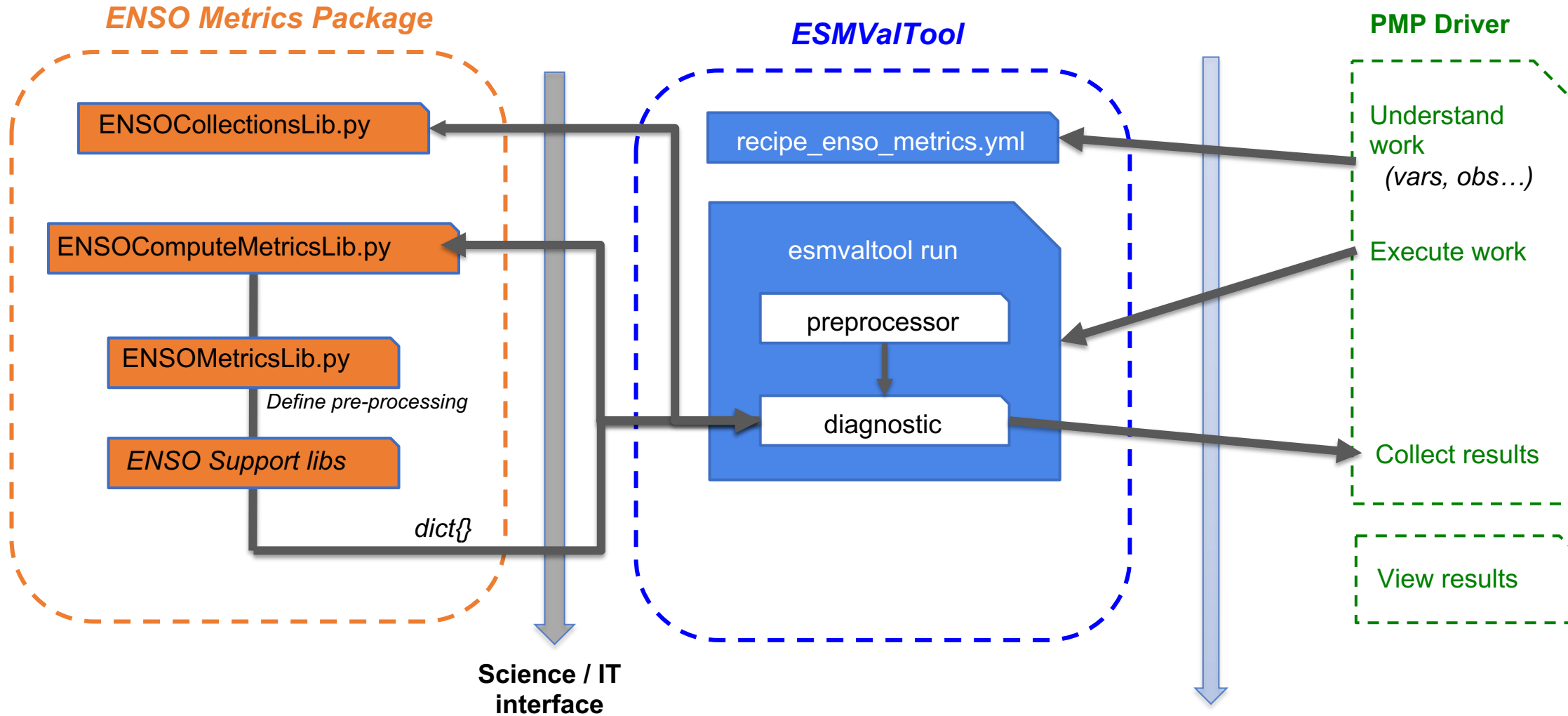
Idealized normal distributions (green and blue) and lognormal distribution (red) illustrating the need to scale the distributions for the portrait plot.
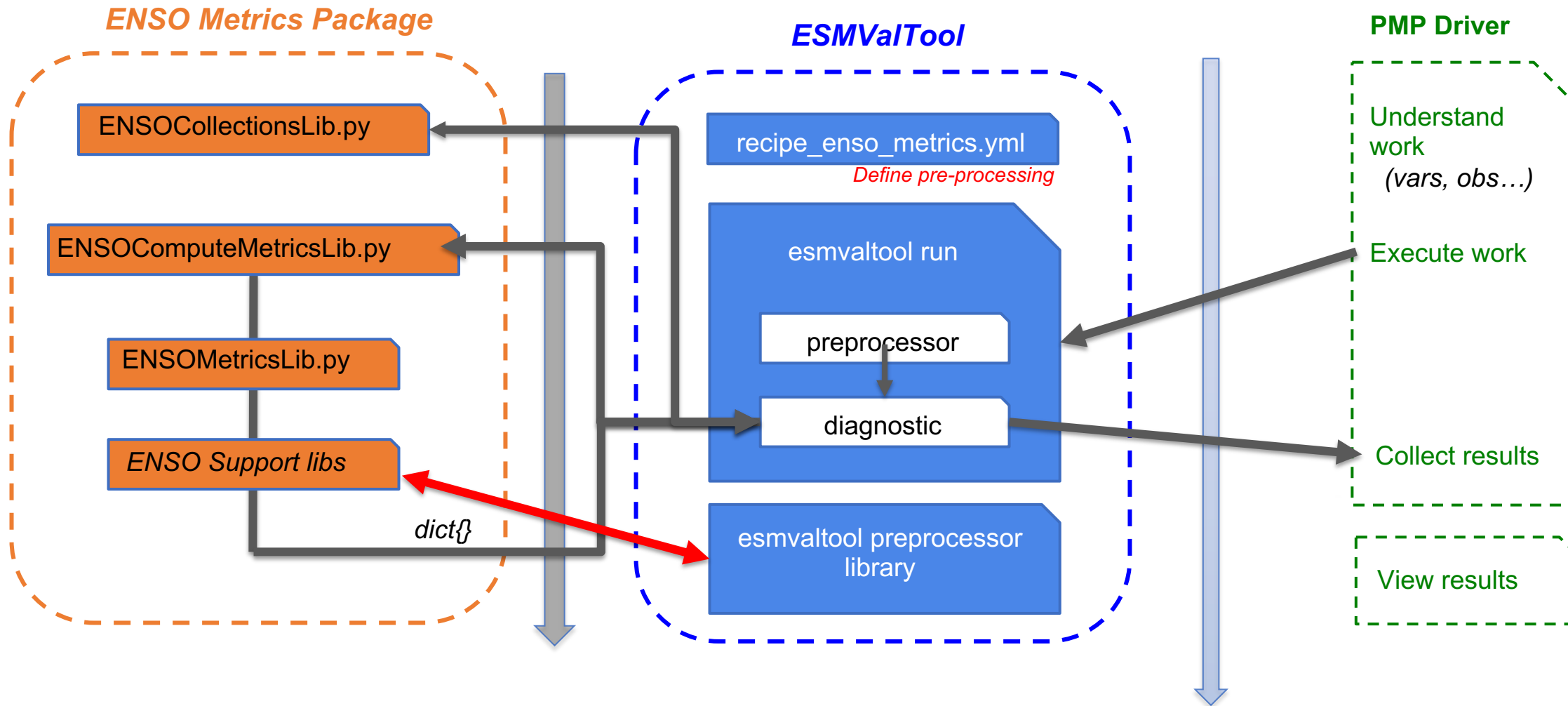
Multi-model mean (MMM) relative to CMIP5

First tests of ENSO package in ESMValTool: current status

ENSO Metrics Package

- ENSOCollectionsLib.py
- ENSOComputeMetricsLib.py
- ENSOMetricsLib.py
  Define pre-processing
- *ENSO Support libs*

dict{}

Science / IT interface

ESMValTool

- recipe_enso_metrics.yml
- esmvaltool run
  - preprocessor
  - diagnostic

PMP Driver

- Understand work *(vars, obs...)*
- Execute work
- Collect results
- View results

First tests of ENSO package in ESMValTool: future work

THE CONSORTIUM

Coordinated by **CNRS-IPSL**, the IS-ENES3 project gathers **22 partners** in **11 countries**

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