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Barcelona Supercomputing Center
Centro Nacional de Supercomputación

EXCELENCIA SEVERO OCHOA

Joint uncertainty assessment of models and observations in verification of climate predictions

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SPECS
Seasonal-to-decadal climate Prediction for the improvement of European Climate Services

esa
European Space Agency

VERITAS-CCI

A traditional verification question

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Is model system B superior to model system A?

A

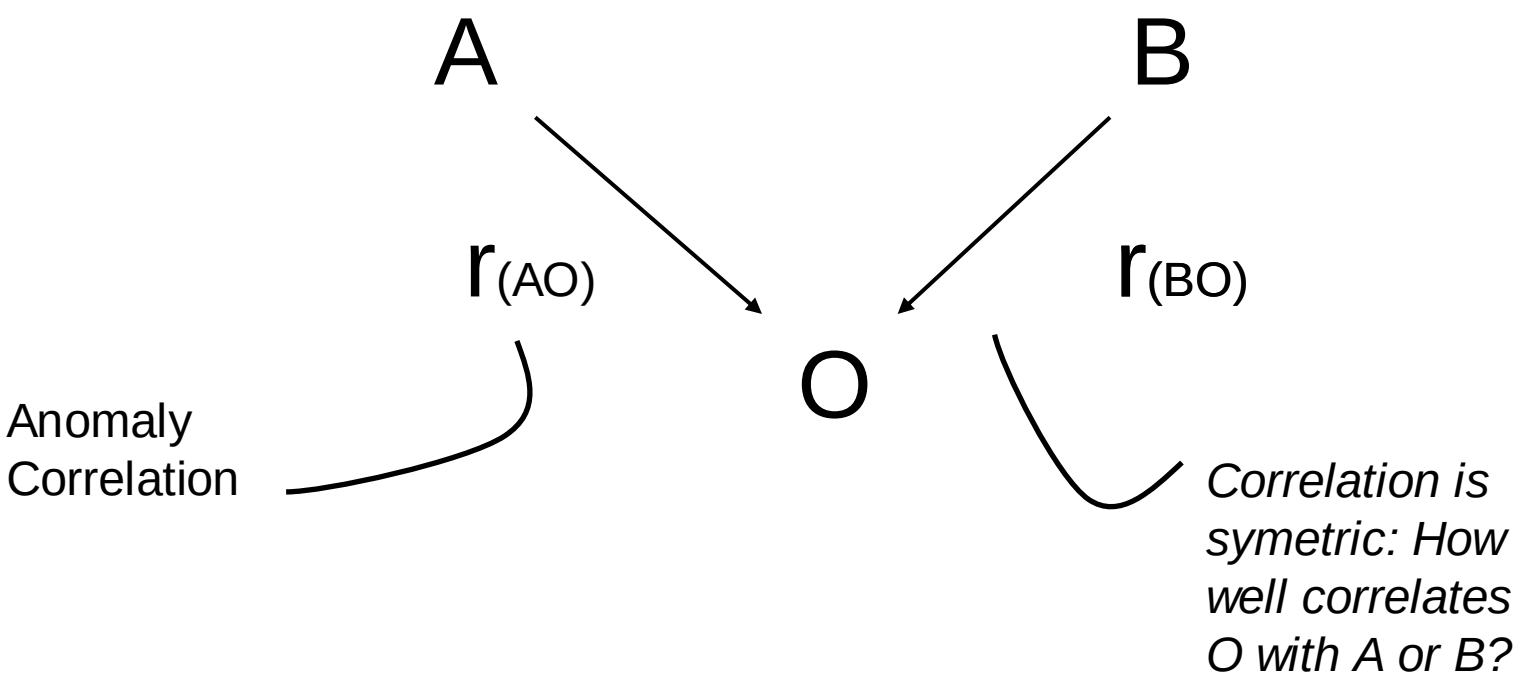
Low horizontal resolution

B

High horizontal resolution

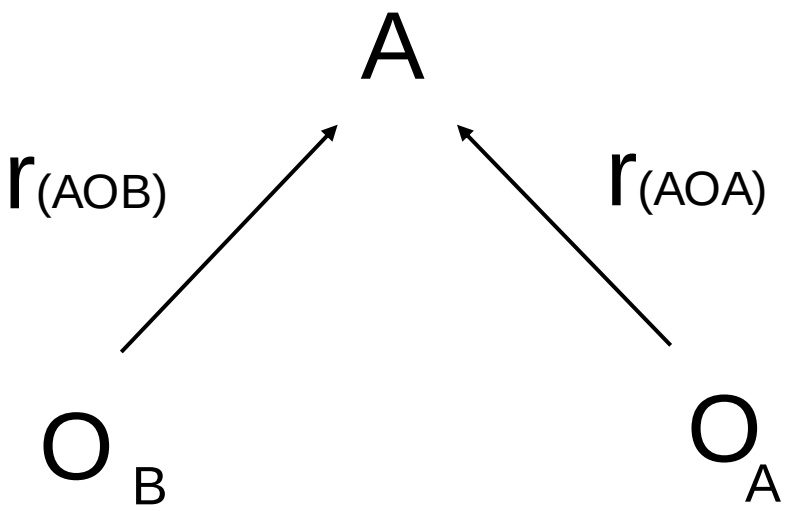
Comparing climate forecasts

Compare hindcast skill with an observation



Reversing the question

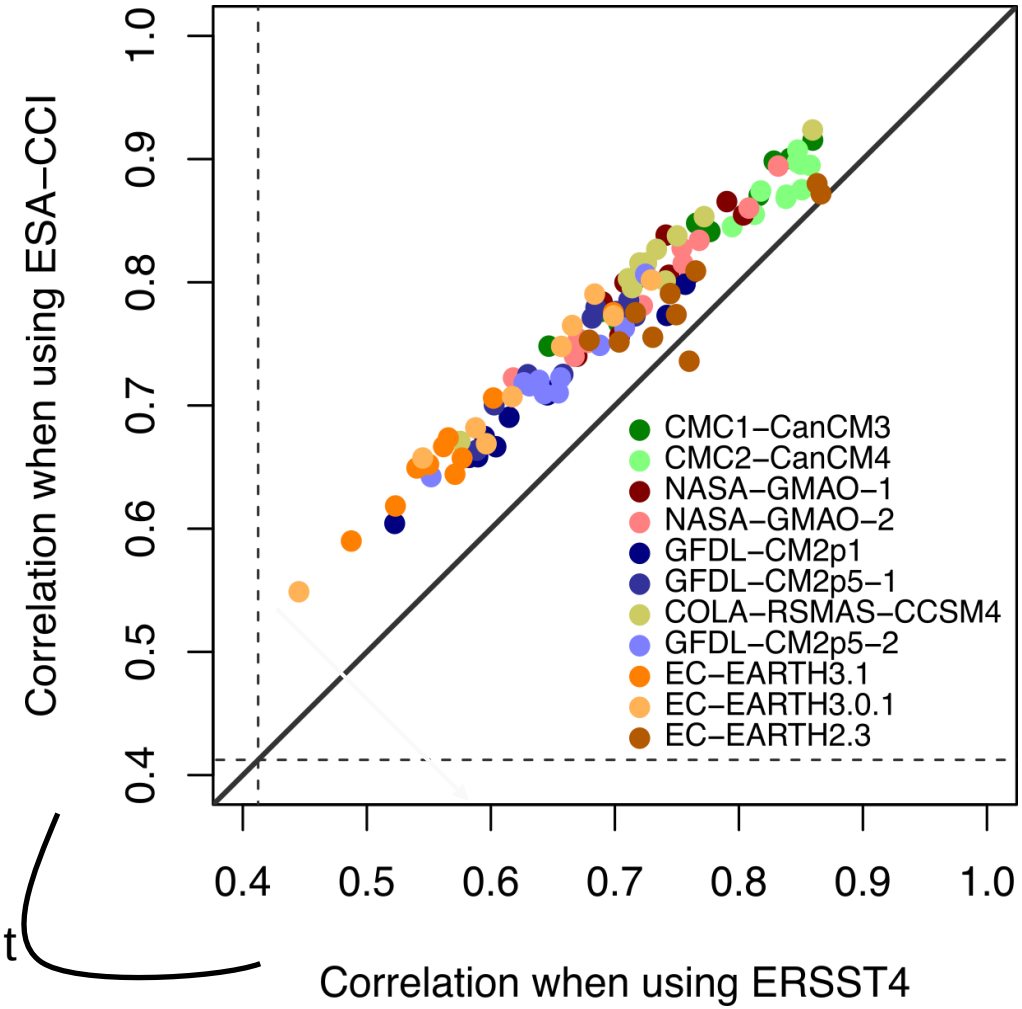
Which observation is better? A useful question?



Reversing verification question

CCI SST yields systematic higher correlation skill across many models

Independent from the models



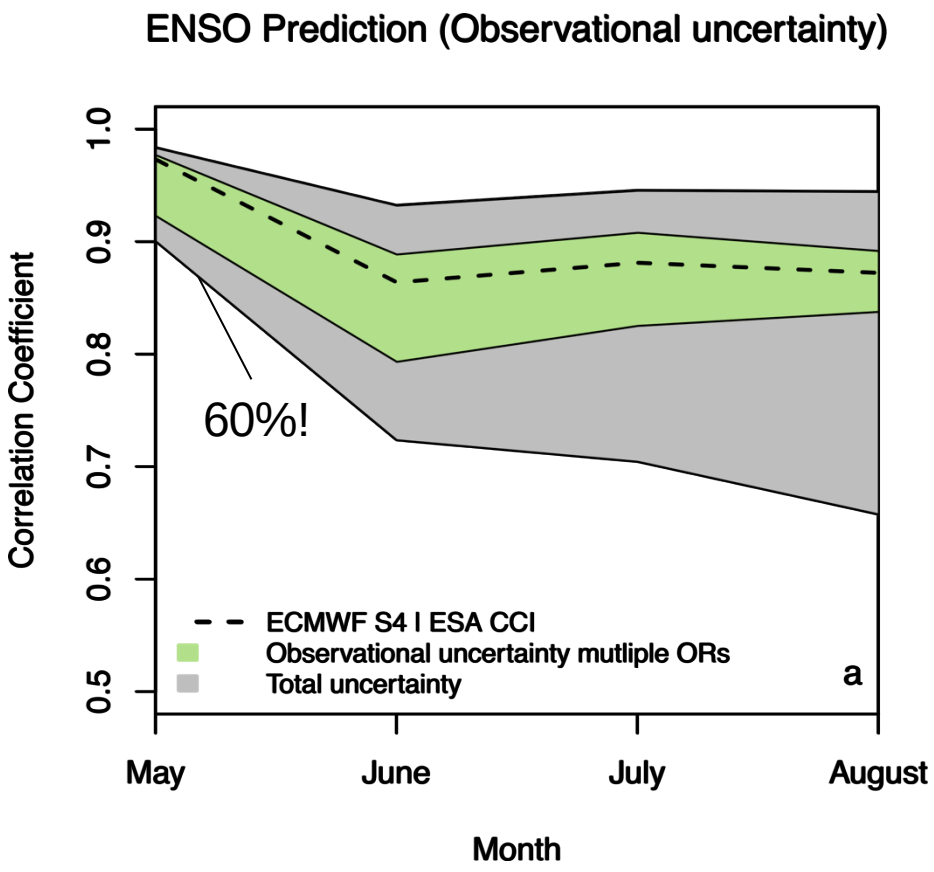
Niño 3.4

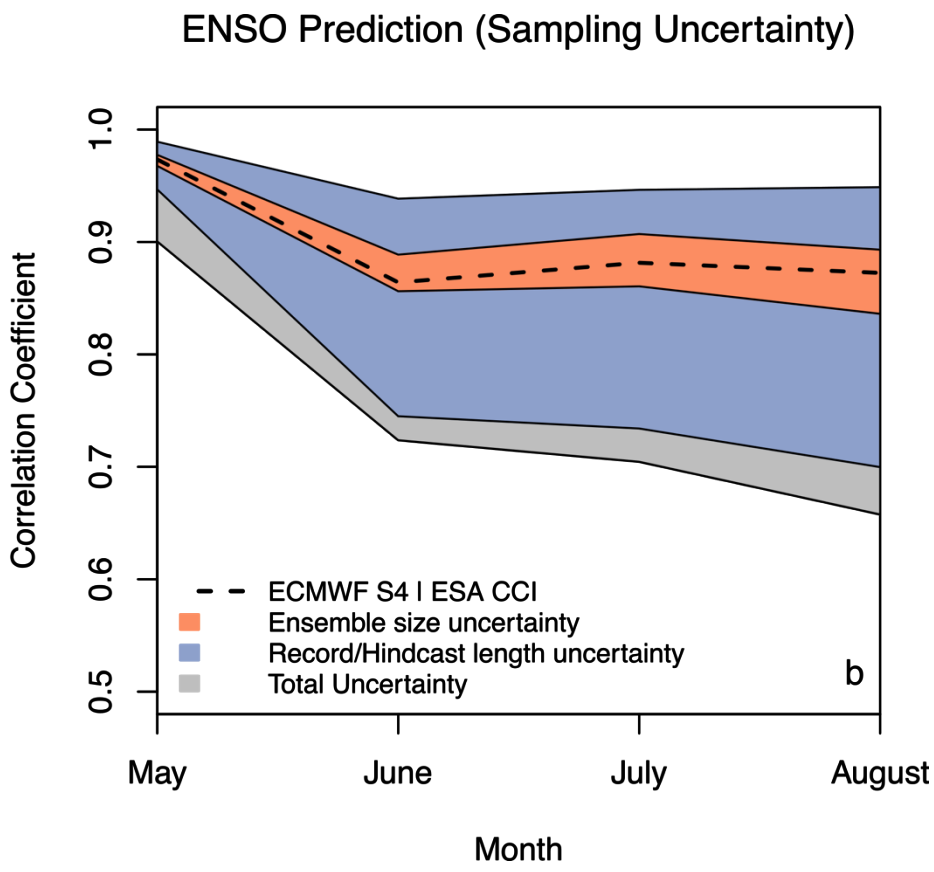
Fully independent datasets

Massonnet et al. (2016) Science

Decomposition of uncertainties

Comparison to sample uncertainties: observational uncertainty is an important source of verification uncertainty for ENSO





Bellprat et al. (2017) Remote Sensing of the Environment

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Thank you!

Massonnet, F., Bellprat, O., Guemas, V., Doblas-Reyes, F. J., (2016). Using climate models to estimate the quality of global observational data sets, *Science (AAAS)*

Bellprat, O., Massonnet, F., Siegert, S., Guemas, V., Doblas-Reyes, F. J. (2017). Exploring observational uncertainty in verification of climate model predictions, *Remote Sensing of the Environment (RSE)*, *in review*