AEROCOM/AEROSAT: remote sensing experiment

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Evaluation of satellite AOT

Aqua/Terra-DT

Aqua/Terra-DB

Aqua/Terra-MAIAC

Aqua/Terra-BAR

AVHRR-SOAR-DB

SeaWiFS-SOAR-DB

OMAERUV

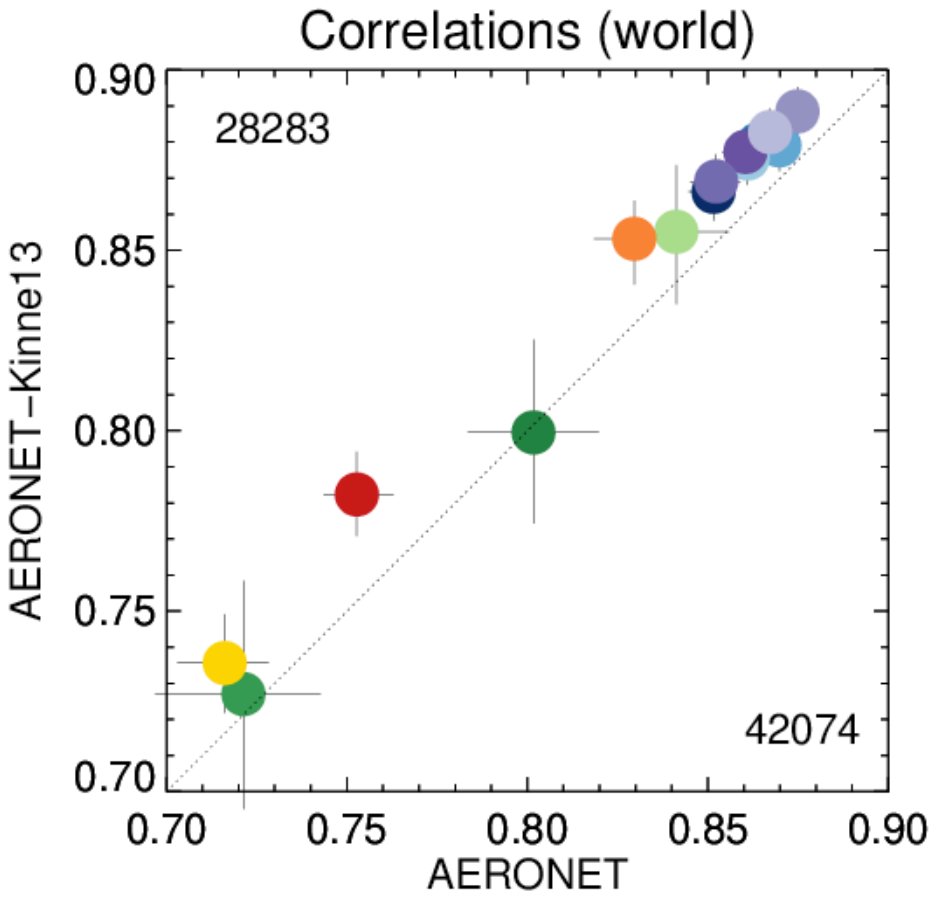
AATSR-FMI

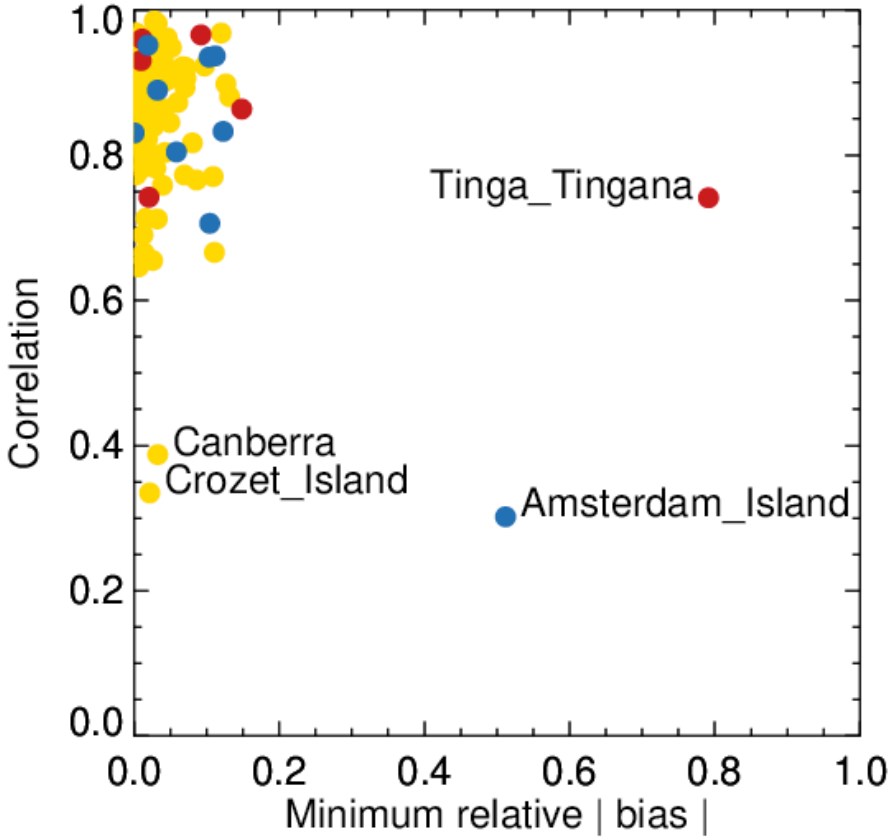
AATSR-RAL

AATSR-SU

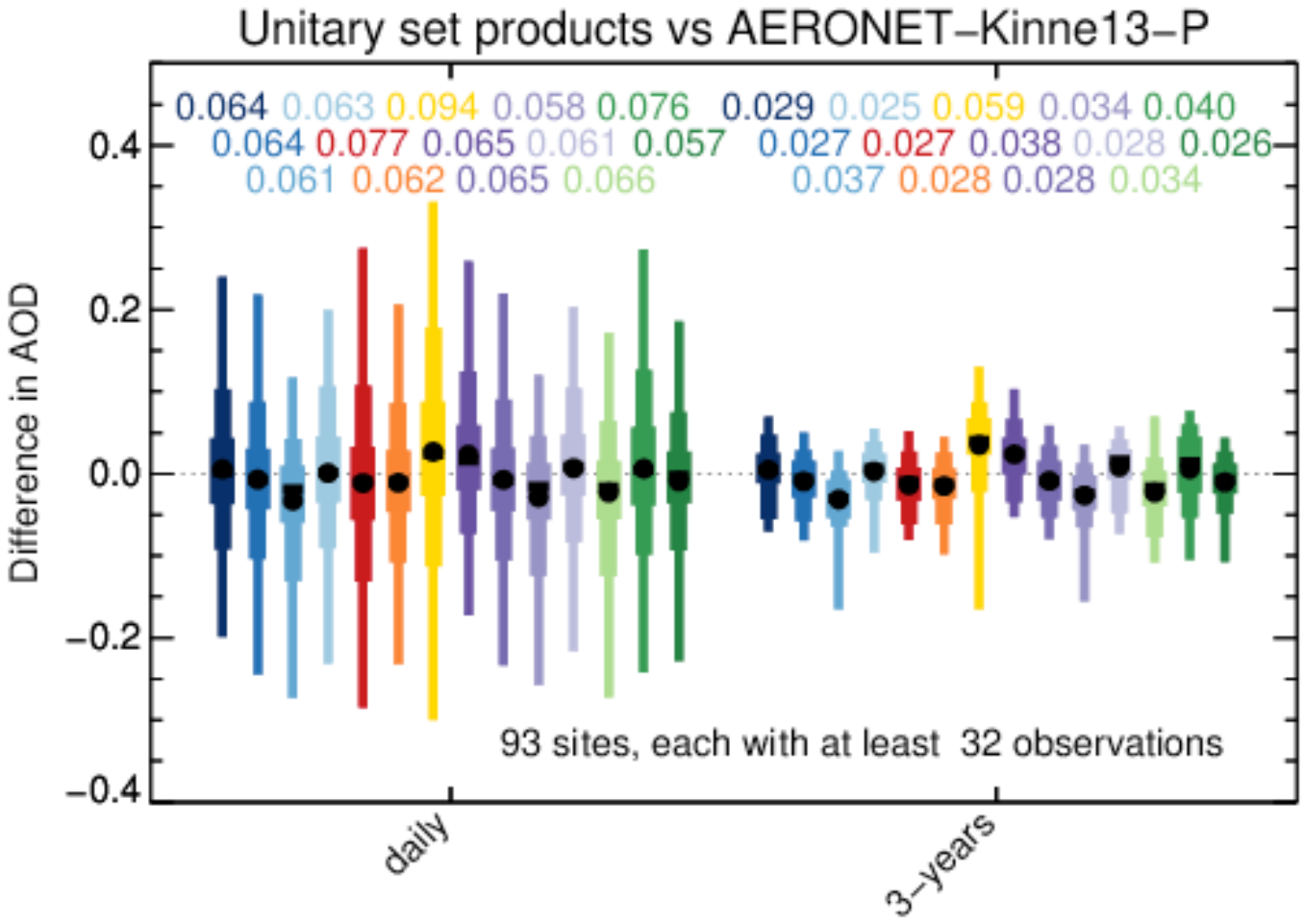
All data are 1^{o} degree time-stamped aggregates

Selection of AERONET sites

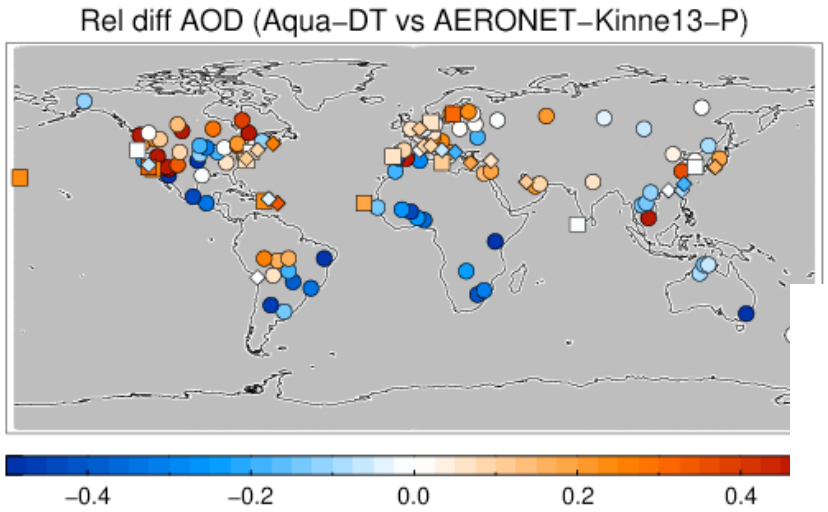




Random errors and biases

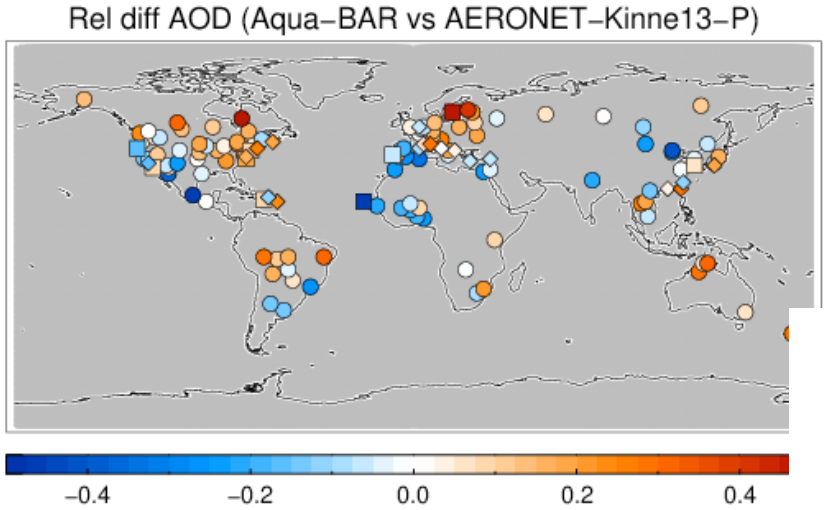


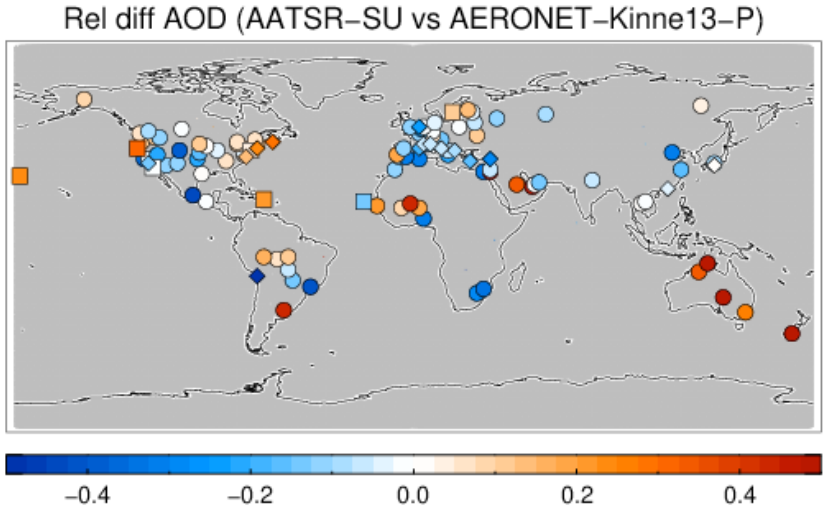
Biases vs AERONET



A typical bias per site is 15-25%, depending on product

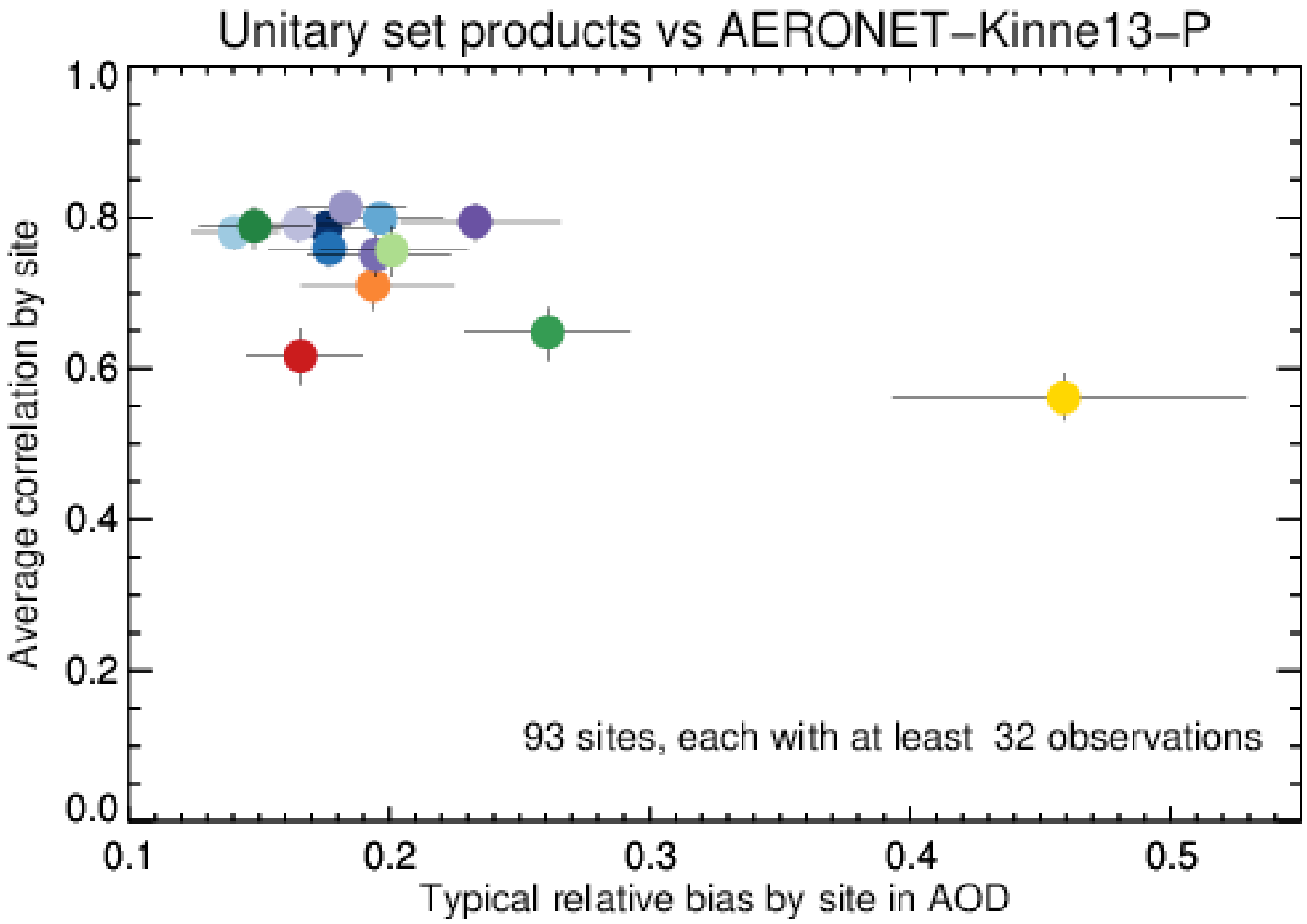
Likely, this is skewed by the geographical distribution of AERONET sites



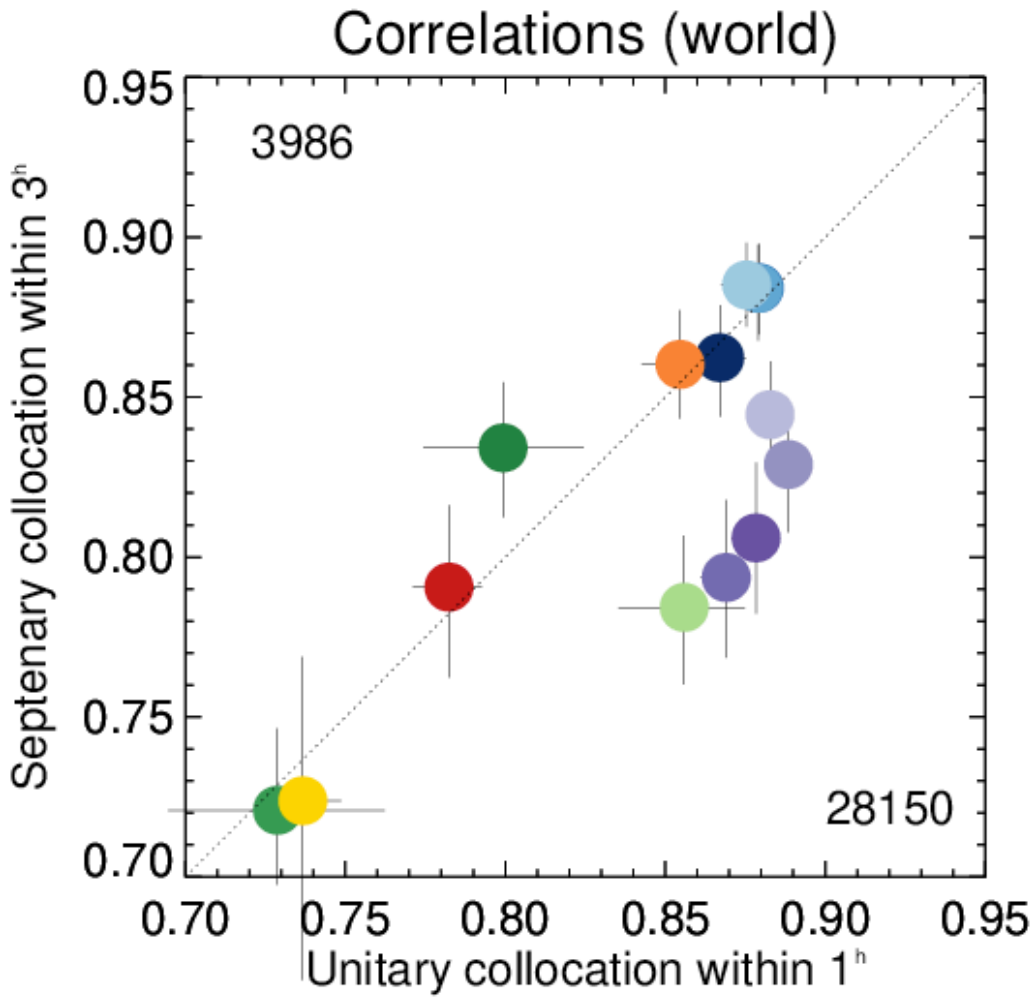


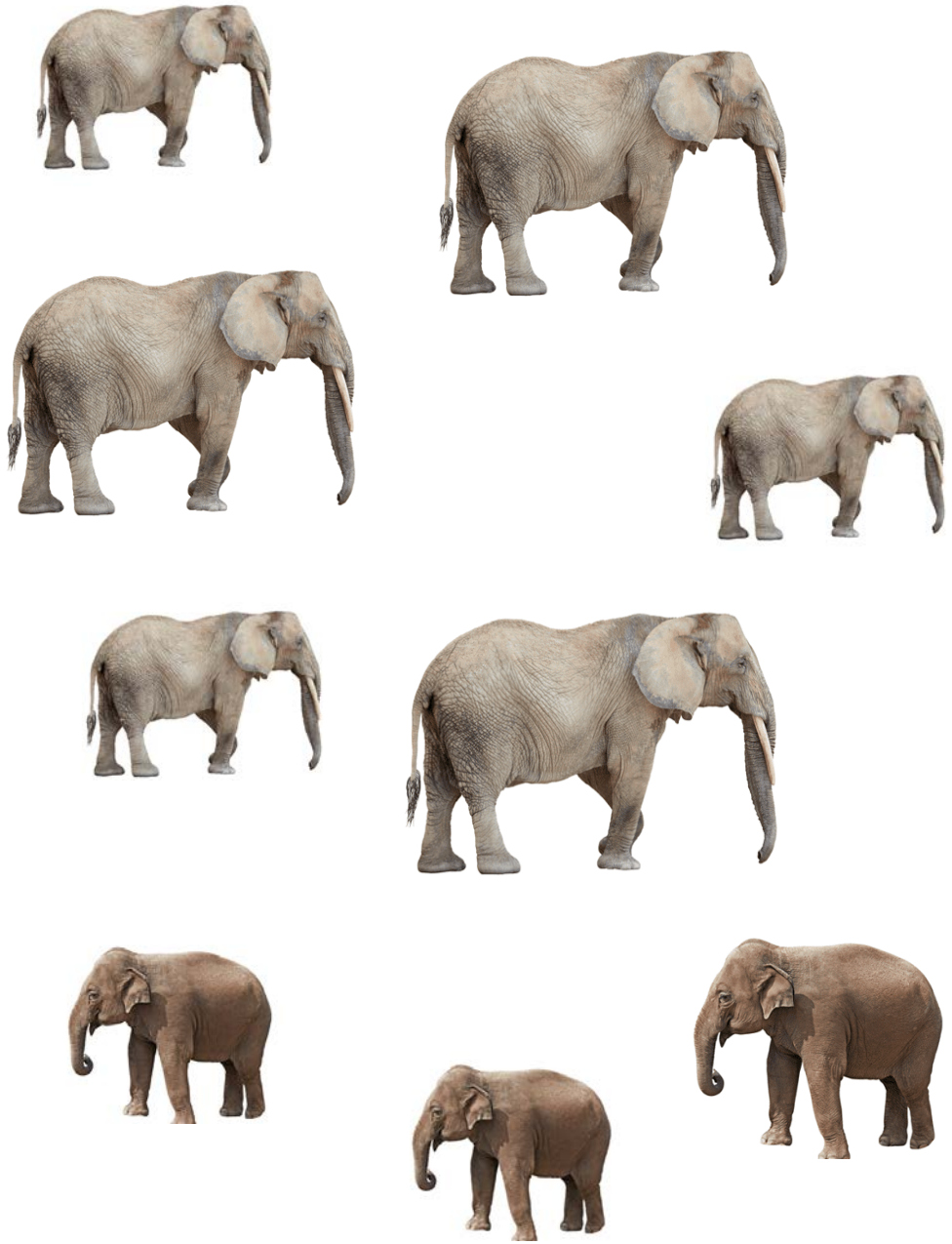
At least 32 observations per site

Statistics, averaged over all sites

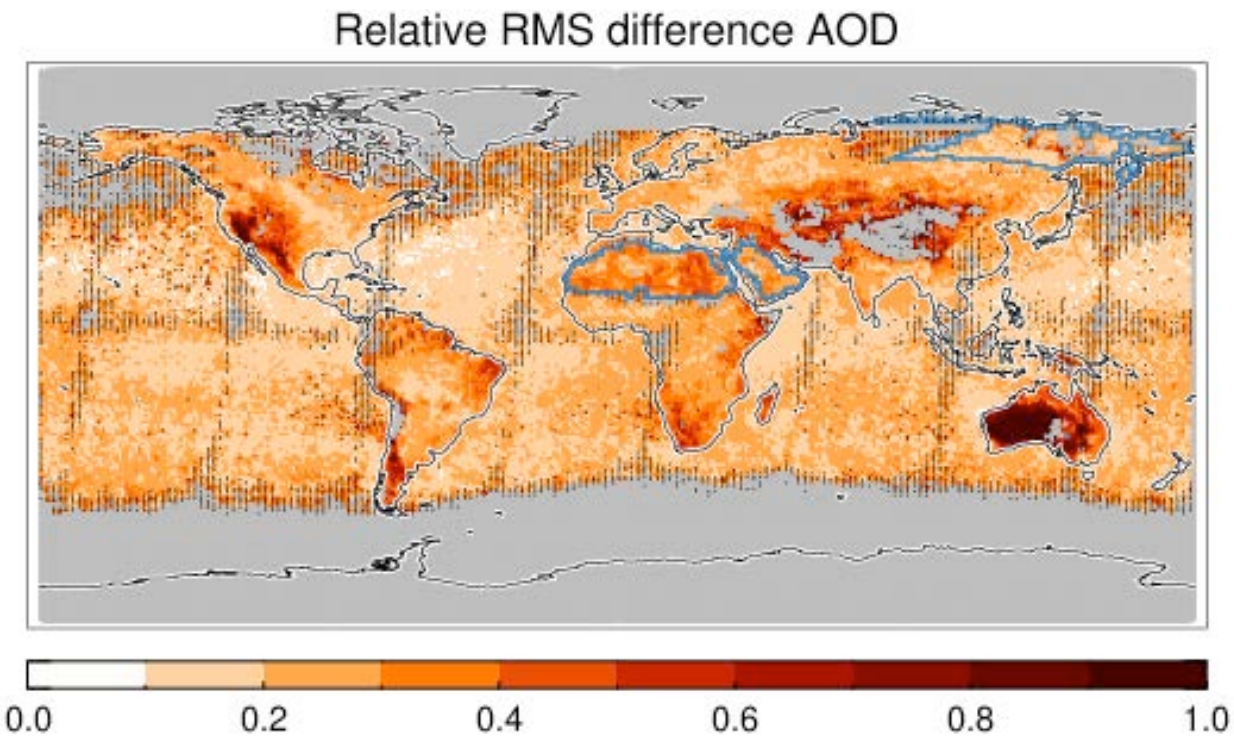


Statistical noise & sampling issues

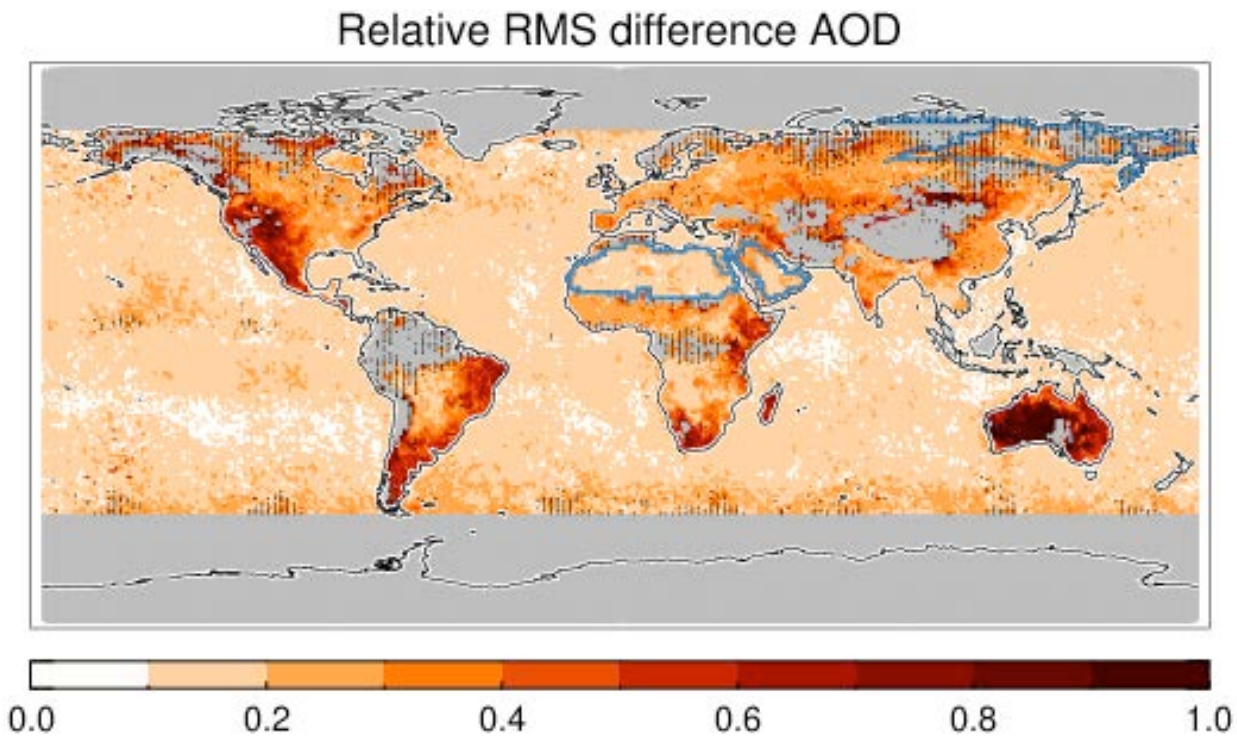




Diversity $\frac{\text{stddev(AOT)}}{\textit{mean(AOT)}}$

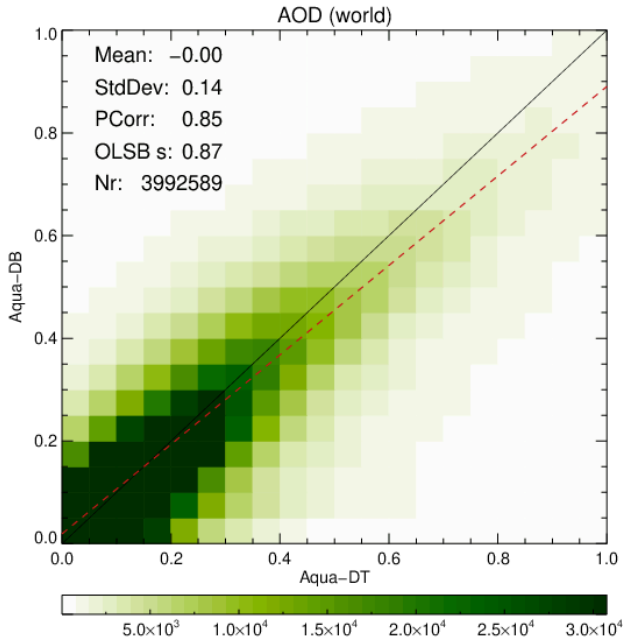


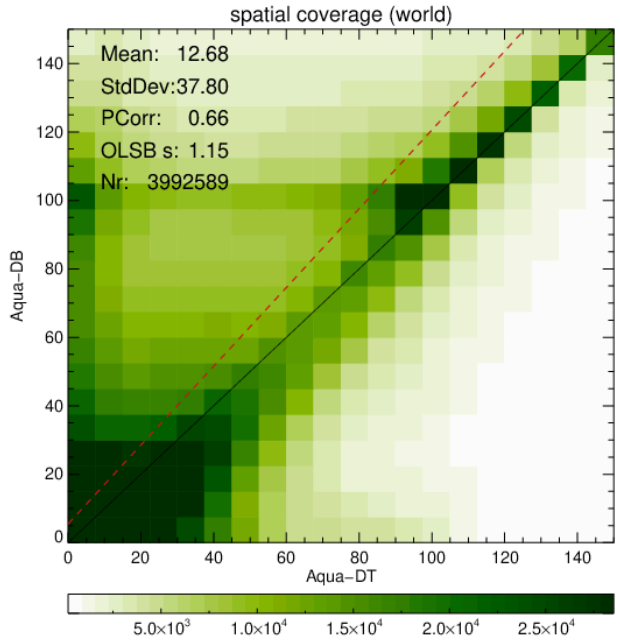
Morning platforms

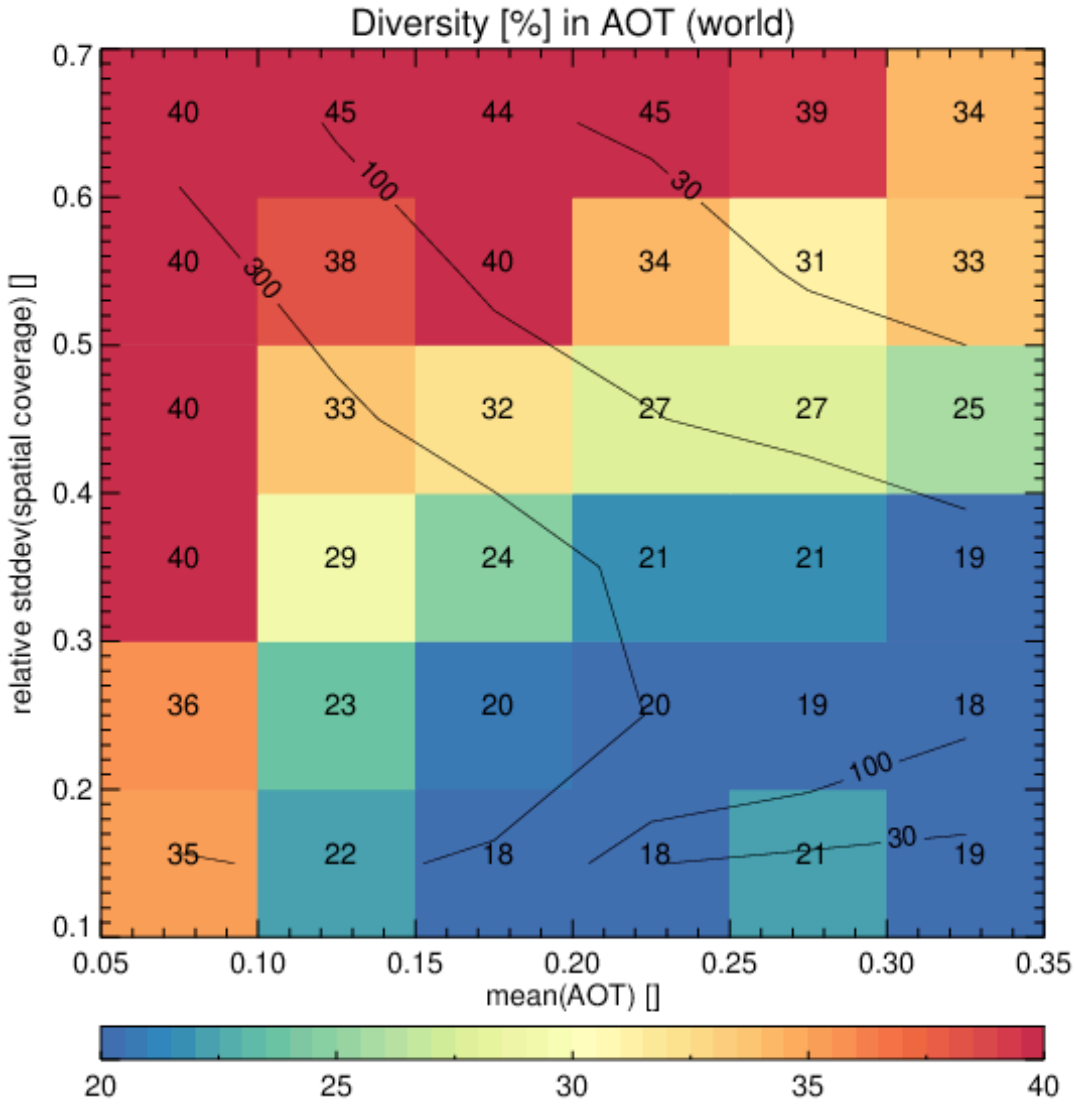


Afternoon platforms

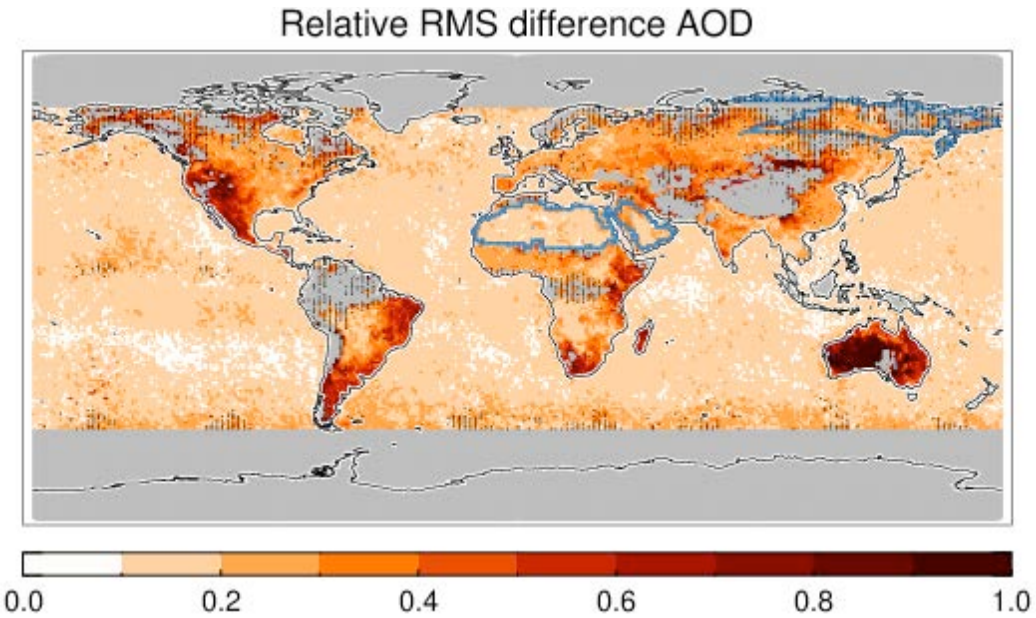
Diversity “explained”

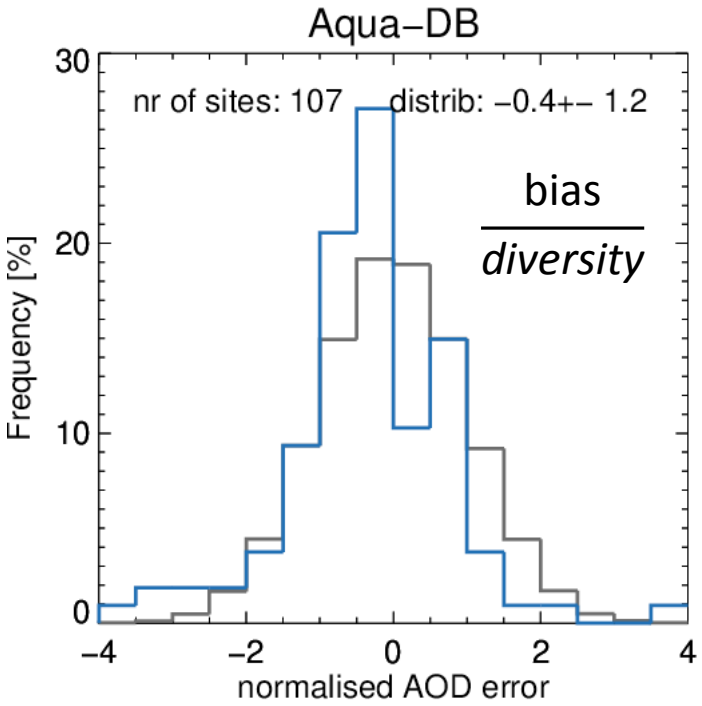


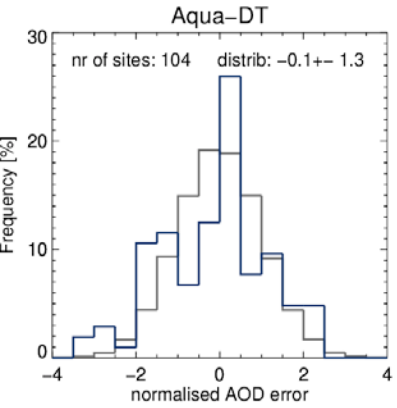


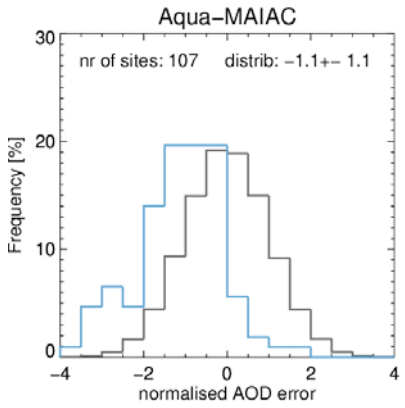


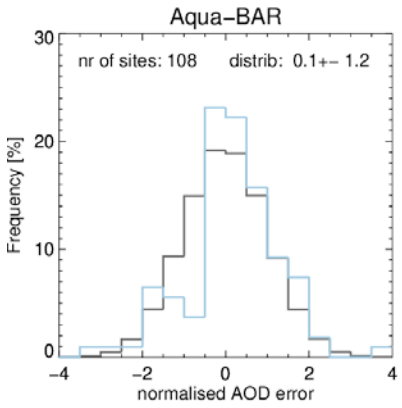
Diversity ≅ uncertainty

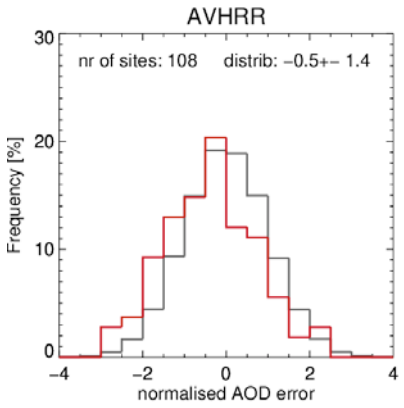


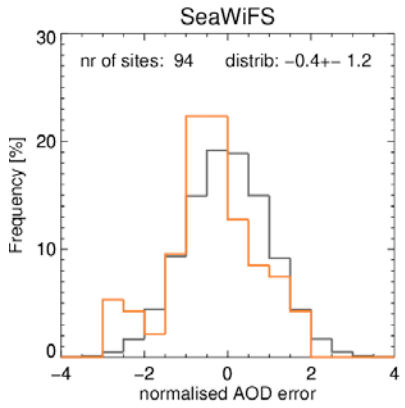


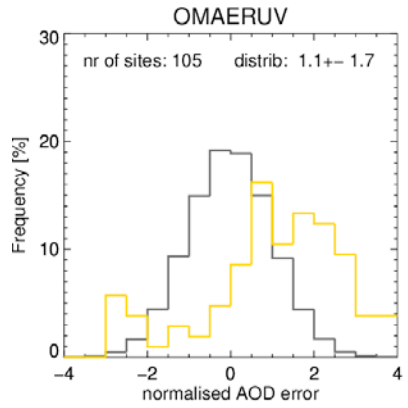












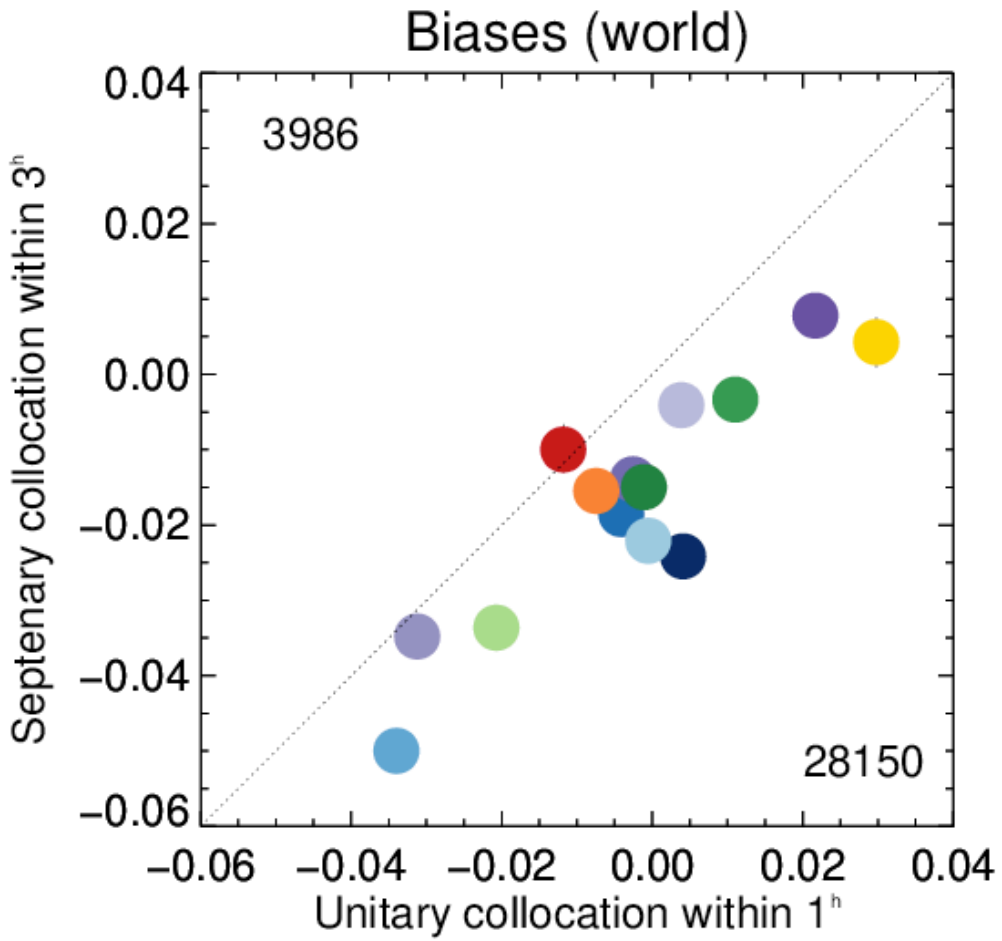
Summary

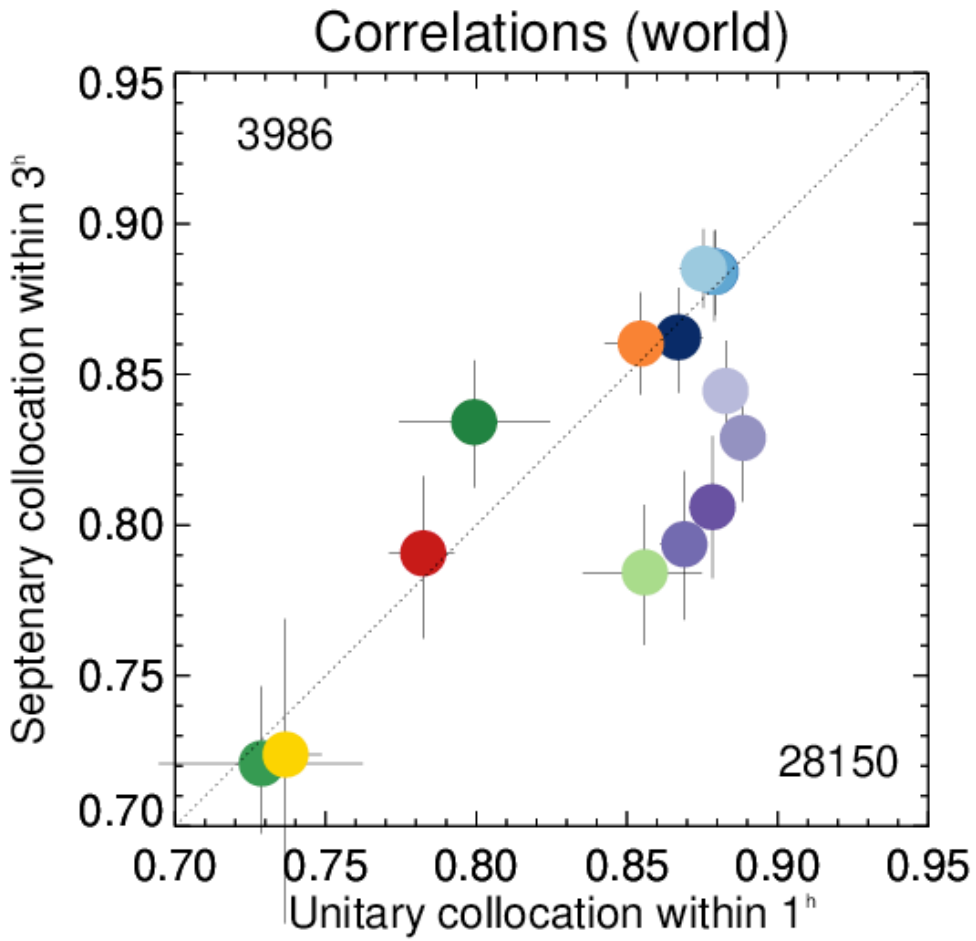
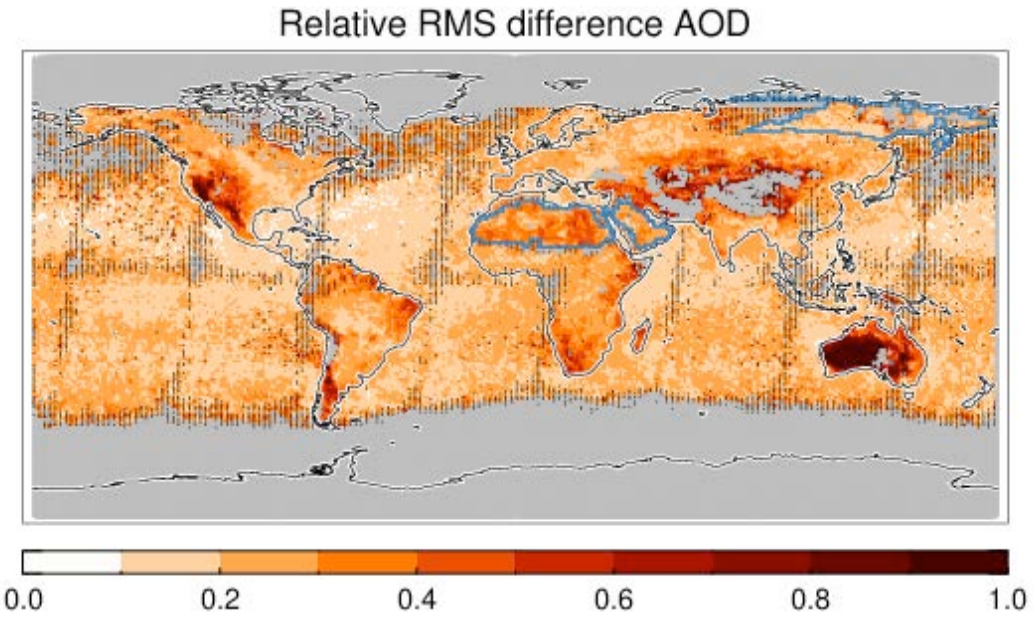
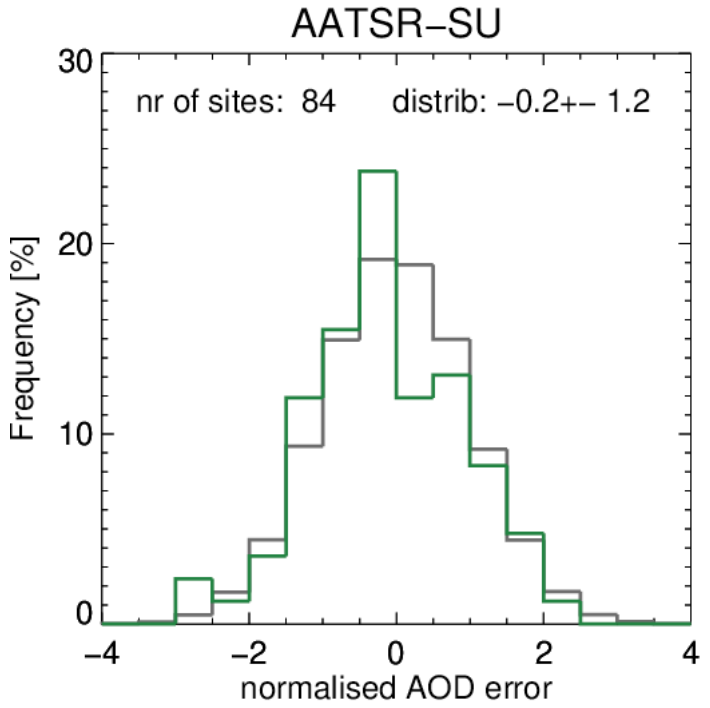
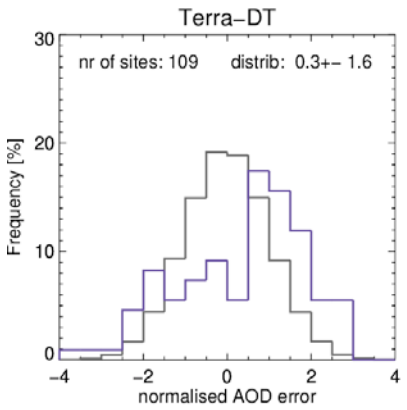
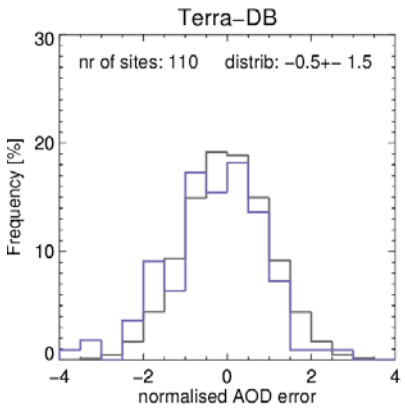
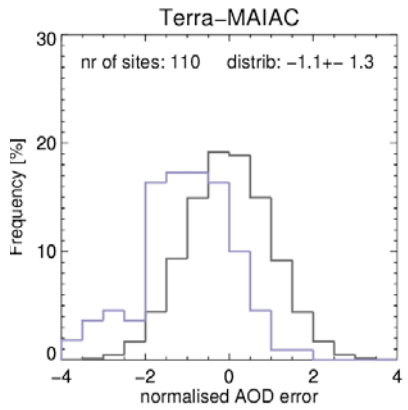
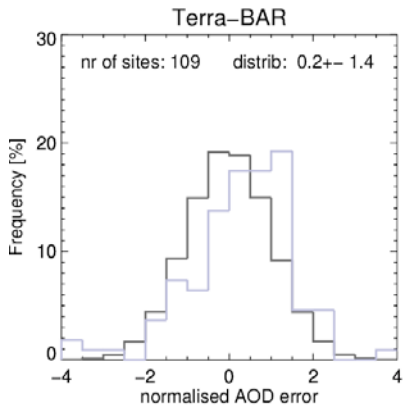
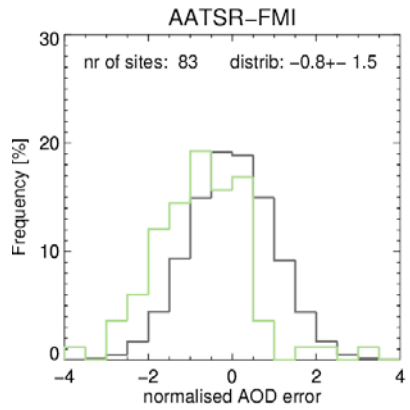
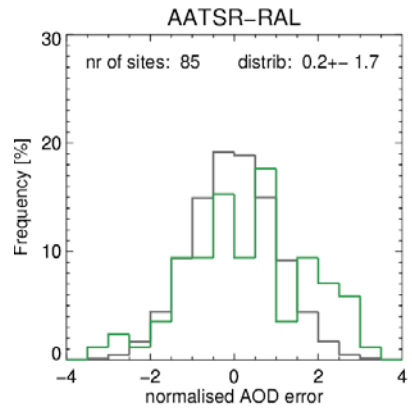
- **In DISCUSSION:** Representativity of AERONET sites
  - Ranked list of site representativity

- **WRITE-UP:** Satellite AAOT evaluation

- **FIRST DRAFT:** Satellite AOT evaluation
  - Map of satellite diversity/uncertainty in AOT

Different intercomparisons …





Diversity ≅ uncertainty