Optical properties AeroCom ExpA

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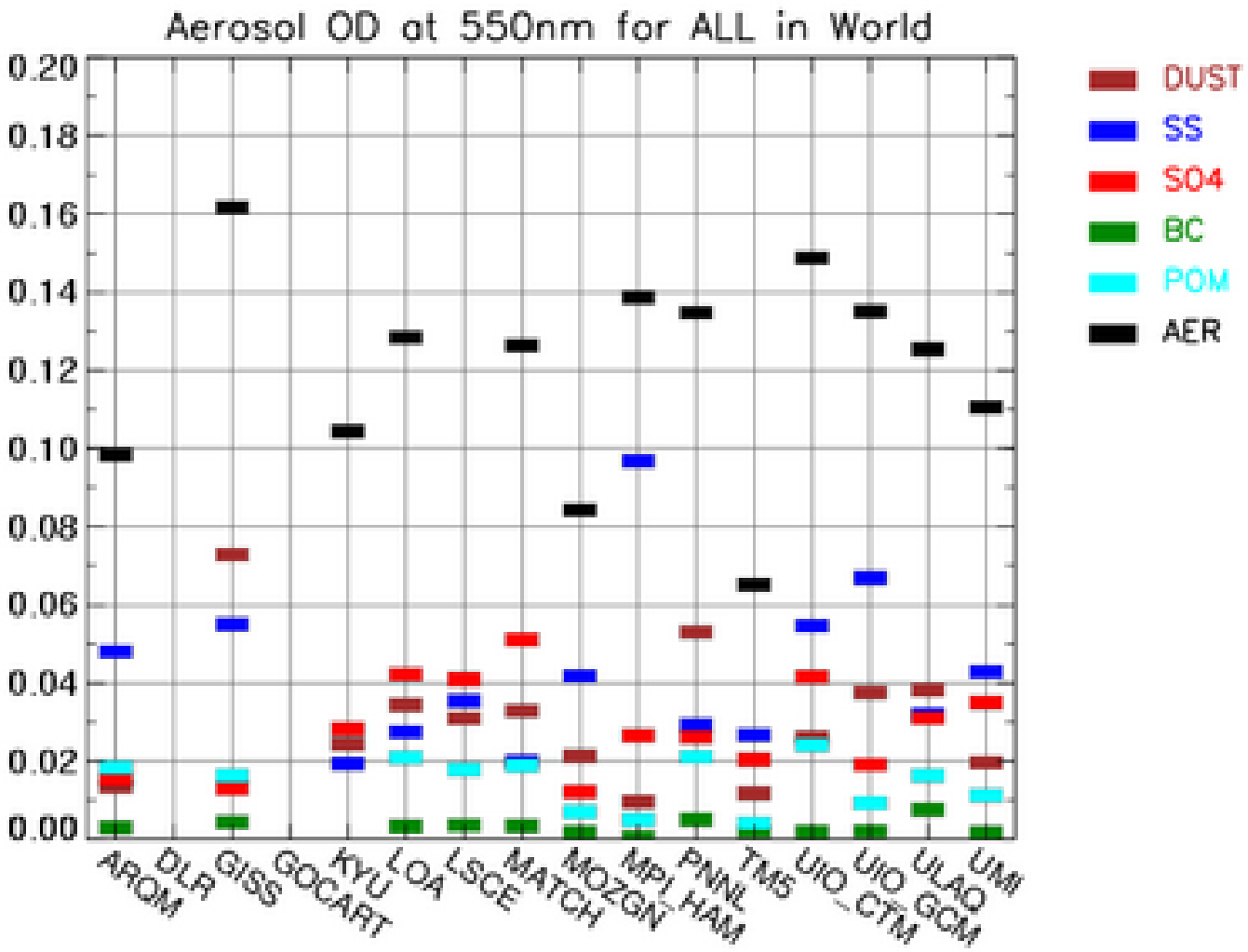
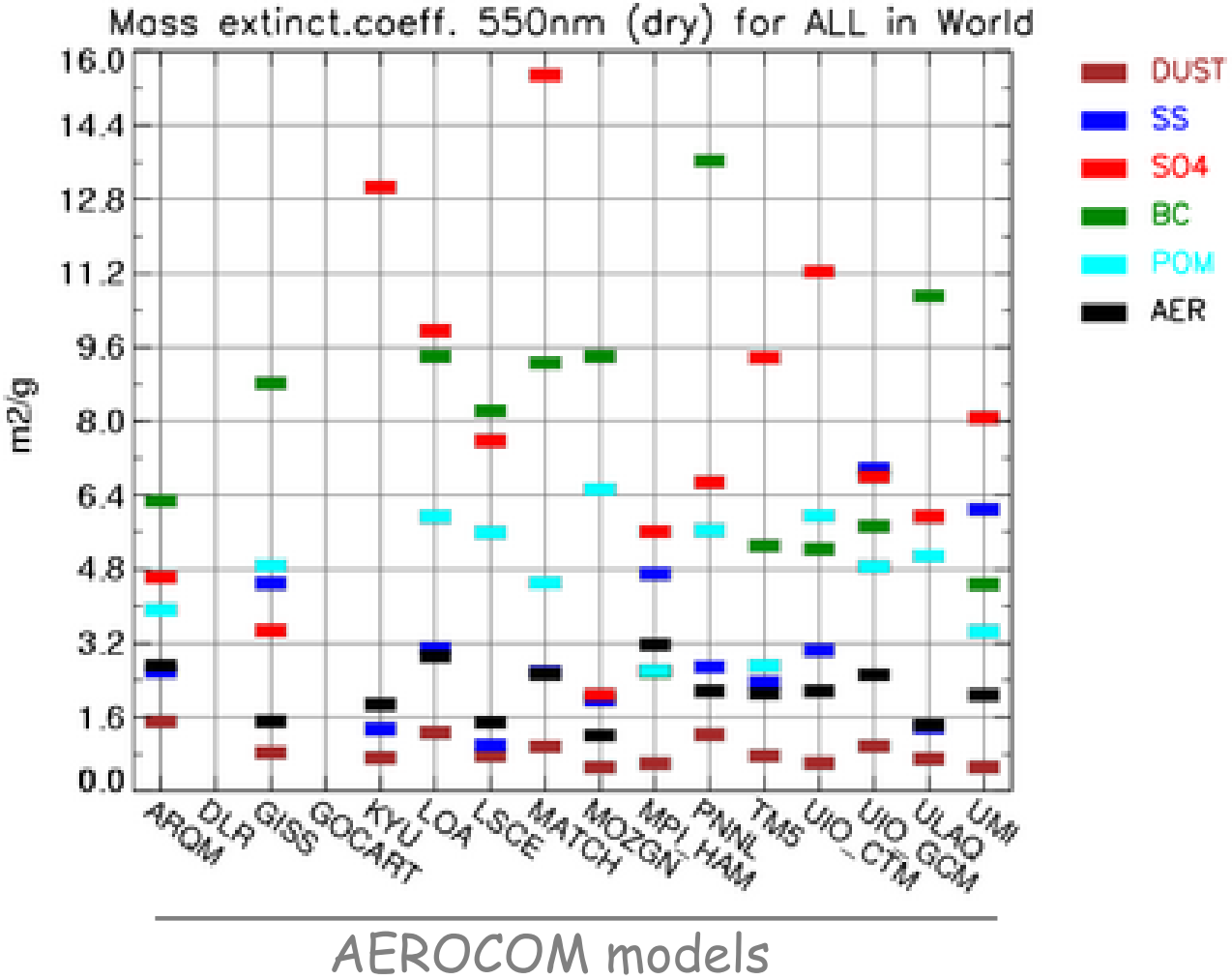
Global mean aerosol optical depth @550nm

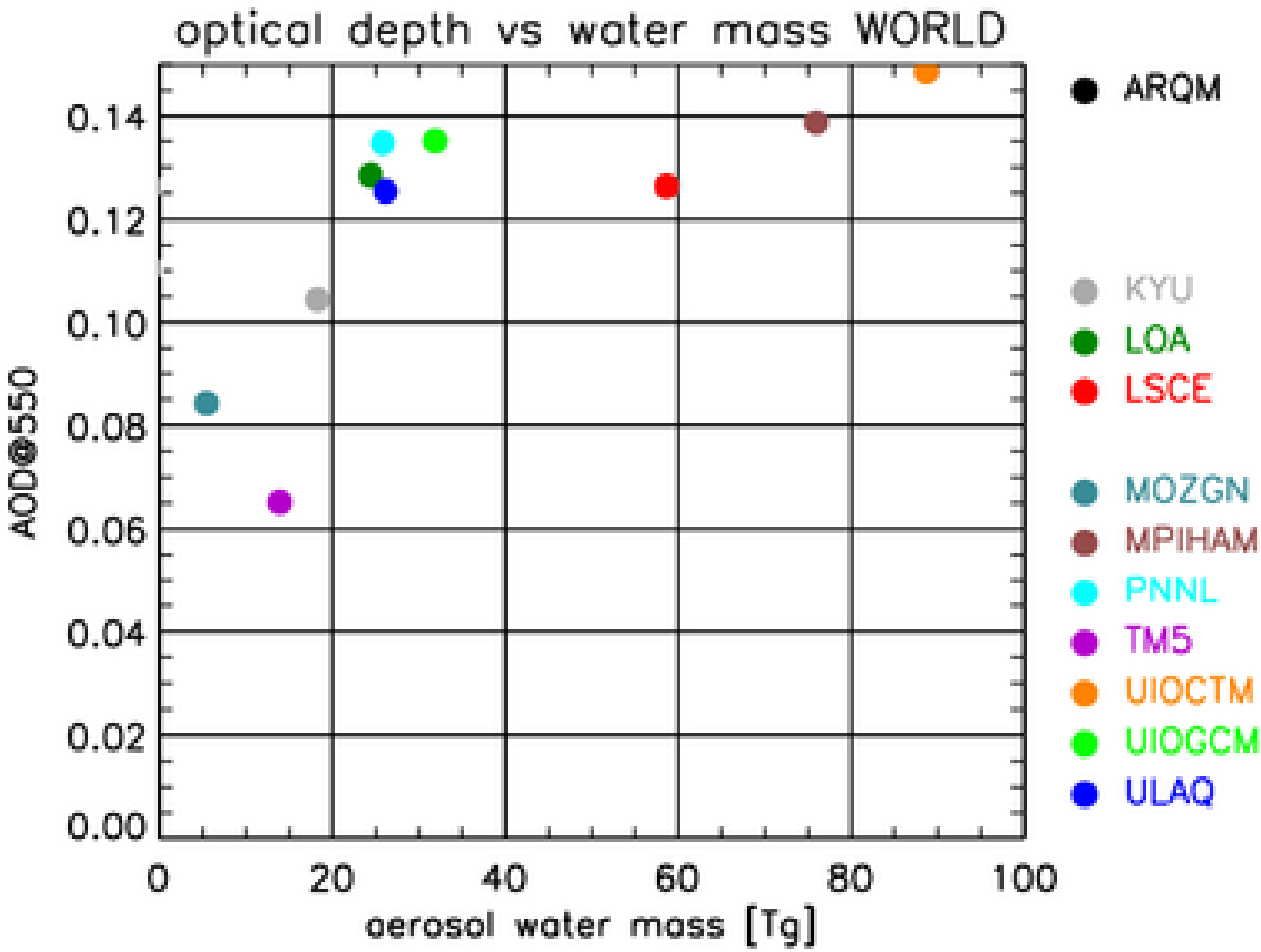


Mass extinction coefficient MEC @550nm



MEC = AOD550/dryload

optical depth @550nm vs aerosol water



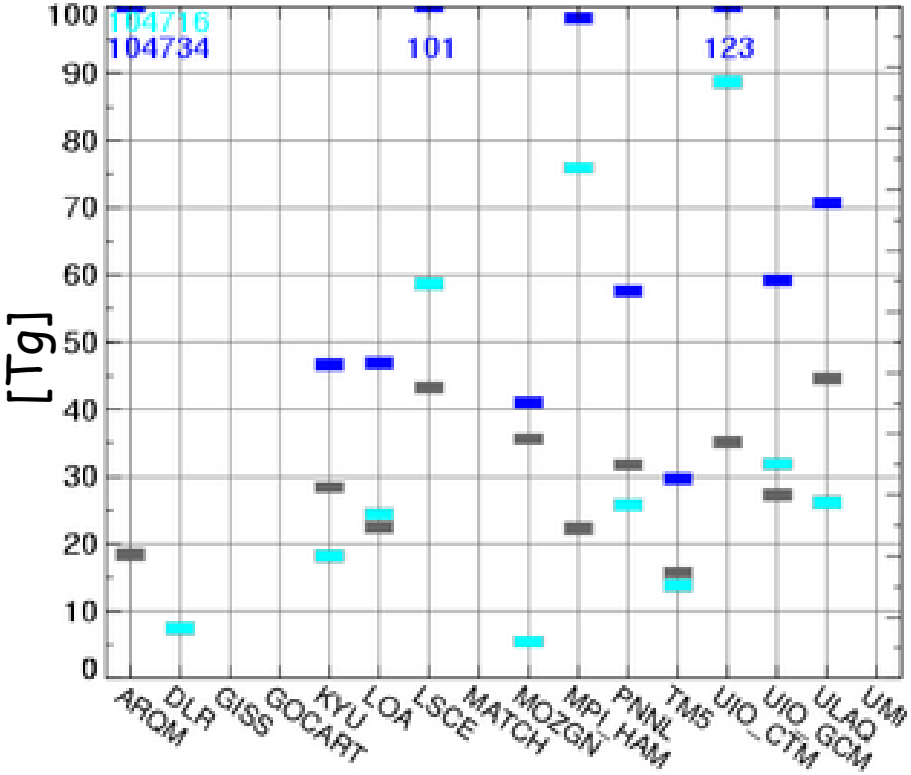
MEC = AOD550 /dryload

= 3*opt_prop/(4*rho*r_eff) *(water+dryload)/dryload)

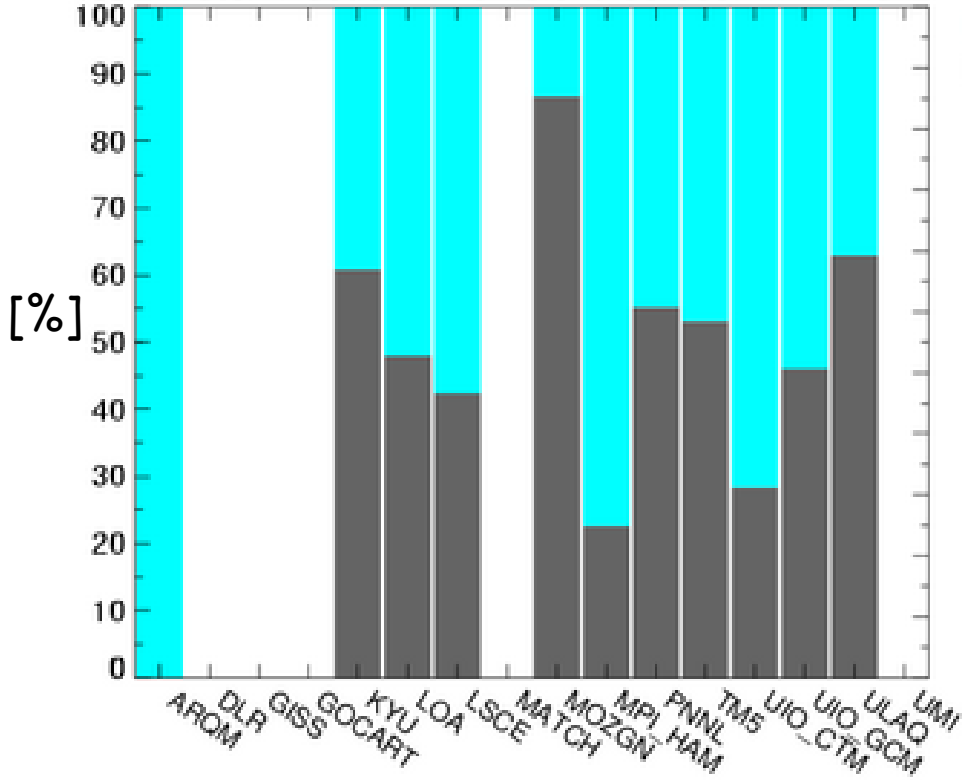
Chin et al., JAS 59, 461-483,2002

Aerosol water

Global mass



Mass fractions



Uncertainty of water load

species	mean [Tg]	median [Tg]	uncertainty [%]
H2O	11671.98	26.15	354

H2O

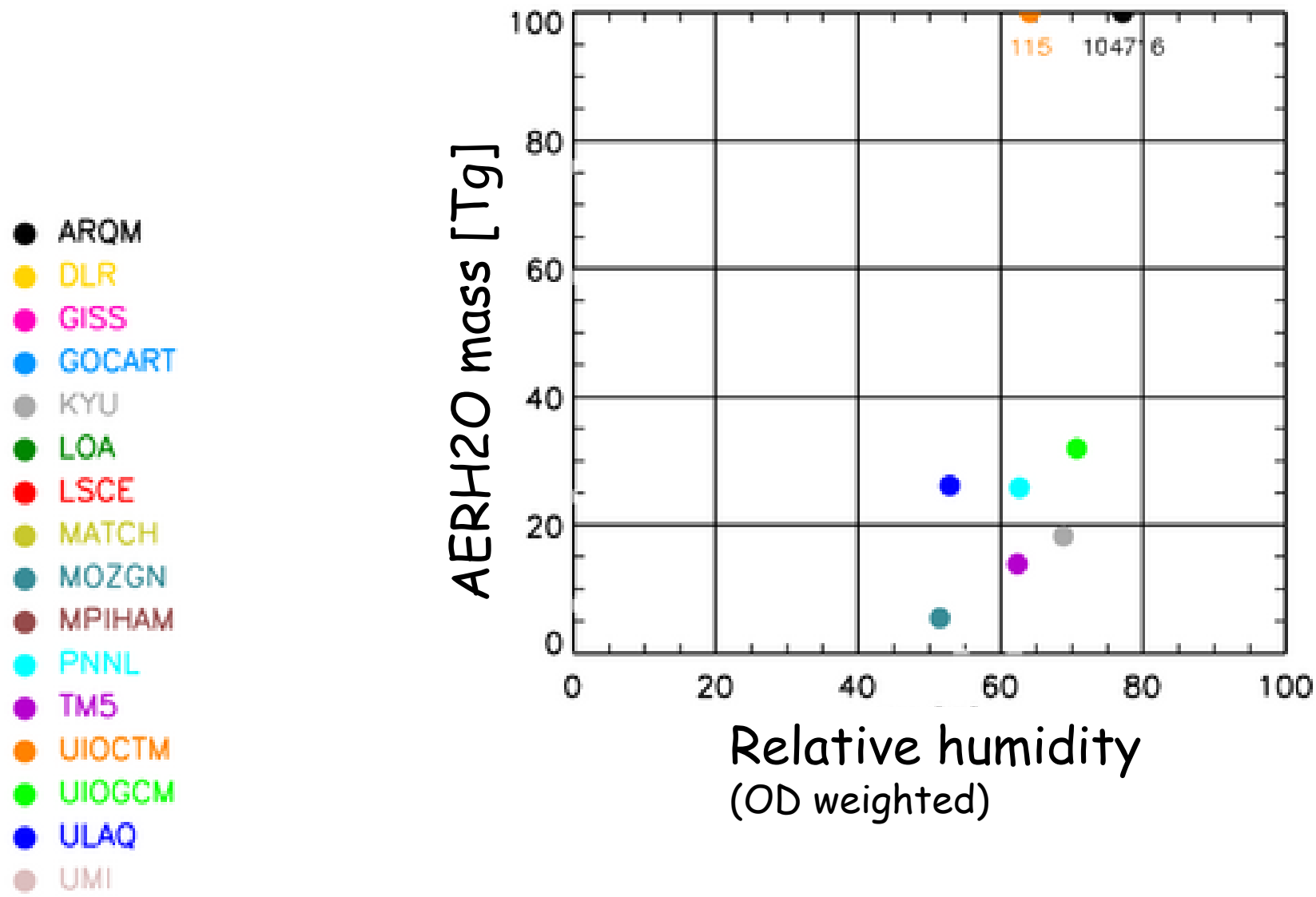
Dry aerosol

Ambient Aerosol (H2O+Dry)

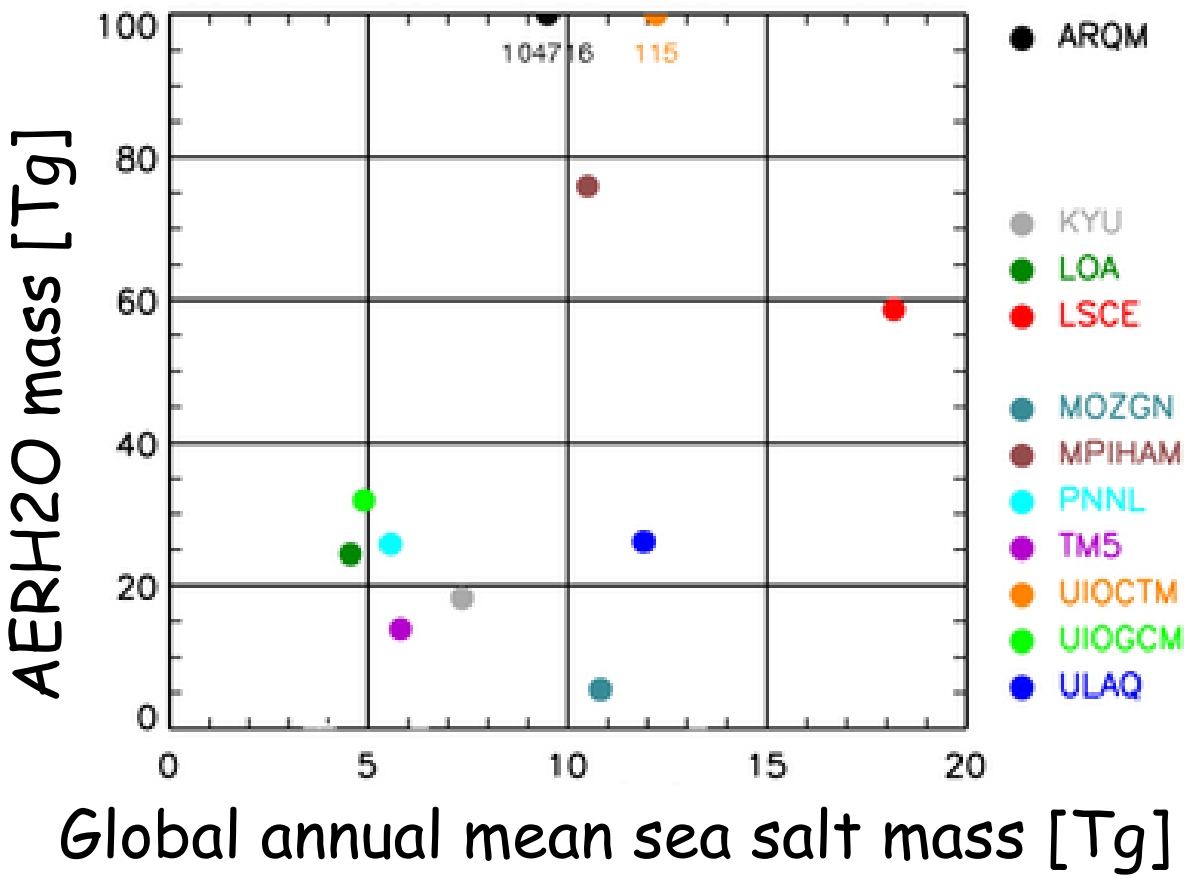
Uncertainty of water mass fraction

species	mean [%]	median [%]	Uncertainty [%]
H2O-fract.	58.55	52.07	56

Global mean aerosol water mass versus relative humidity



Global annual mean masses: aerosol water versus sea salt

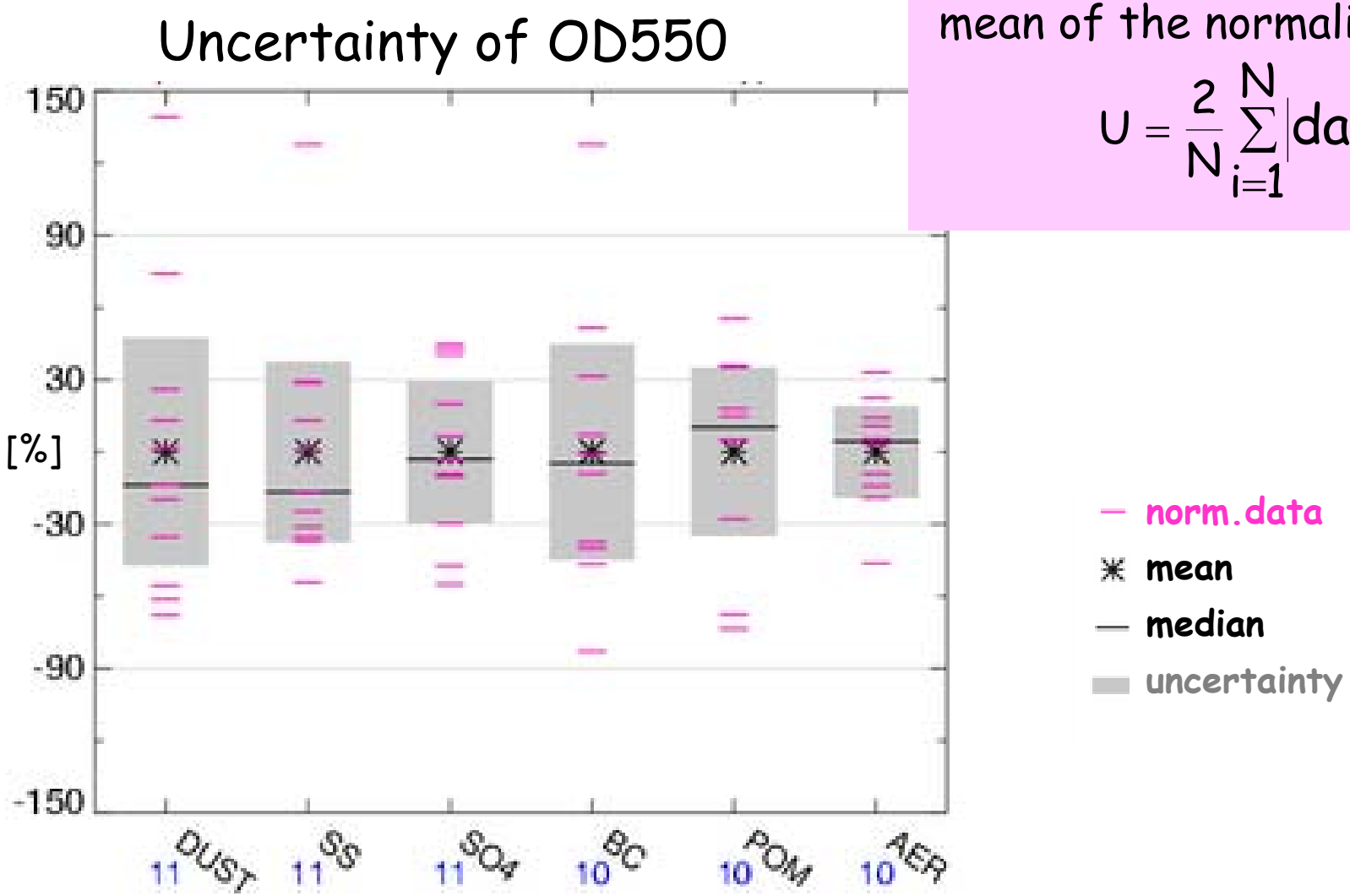


AROM
DLR
GISS
GOCART
KYU
LOA
LSCE
MATCH
MOZGN
MPIHAM
PNNL
TM5
UIOCTM
UIOGCM
ULAQ
UMI

Global mean aerosol optical depth @550nm

Uncertainty U:
twice the average absolute deviation from the all-models-mean of the normalized data

$$U = \frac{2}{N} \sum_{i=1}^{N} |data|$$



Mass extinction coefficient MEC @550nm