

# **AeroCom-model assessment of black carbon in Arctic snow and sea ice**

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**Models generally overestimate in Arctic snow the BC concentrations**

**Statistical correlations between models and observations are low**

**Local observational samples in the Arctic provide a good representation of the Arctic as a whole**

**Inter-model variations in chemical and physical processes contribute to more model diversity than the differences in emission inventory**

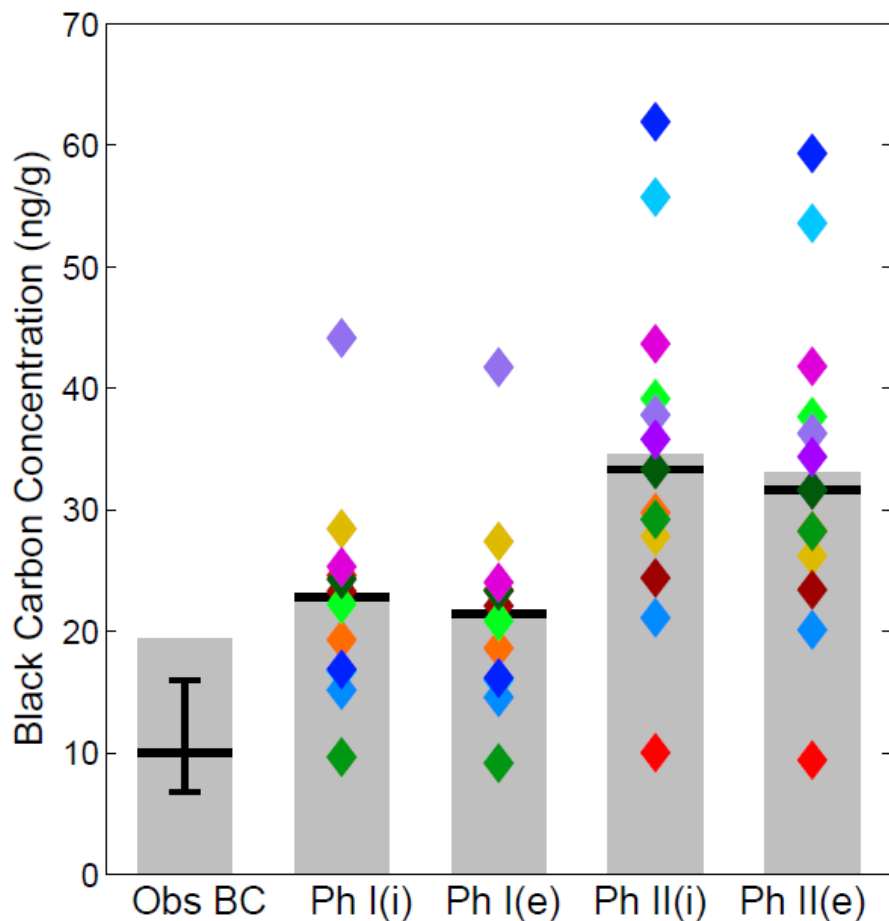
# Obs – Observations

Ph I – AeroCom phase 1

Ph II – AeroCom phase 2

i – inefficient melting

e – efficient melting



# investigated model results

No.	Phase I (Exp. B)	Phase II (Exp. A2CTRL)
1	DLR	CAM4-Oslo
2	GISS	CAM4-Oslo_Vcmip5
3	LOA	CAM5-MAM3-PNNL
4	LSCE	GISS-MATRIX
5	MATCH	GISS-modeIE
6	MPI_HAM	GLOMAPmodev4
7	TM5	GMI
8	UIO_CTM	HadGEM2-ES
9	UIO_GCM	MPIHAM_V2_KZ
10	UIO_GCM_V2	OsloCTM2
11	ULAQ	SPRINTARS-v384
12	UMI	TM5-V3
13		UMI

- Model No.1
- Model No.2
- Model No.3
- Model No.4
- Model No.5
- Model No.6
- Model No.7
- Model No.8
- Model No.9
- Model No.10
- Model No.11
- Model No.12
- Model No.13

**BC in snow  
radiative forcing  
Impact, in W/m<sup>2</sup>**

	Original	Corrected
Phase I	0.15	0.13
Phase II	0.17	0.11