Supplement to

Natural marine bromoform emissions in the fully coupled ocean-atmosphere-model NorESM2

Dennis Booge[1,2], Jerry F. Tjiputra[3], Dirk J. L. Olivié[4], Birgit Quack[1] and Kirstin Krüger[2]

[1]GEOMAR Helmholtz Centre for Ocean Research Kiel, Kiel, 24105, Germany
[2]Department of Geosciences, Section of Meteorology and Oceanography, University of Oslo, Oslo, 0371, Norway
[3]NORCE Norwegian Research Centre and Bjerknes Centre for Climate Research, Bergen, 5007, Norway
[4]Norwegian Meteorological Institute, Oslo, 0313, Norway

Correspondence to: Dennis Booge (dbooge@geomar.de) and Kirstin Krüger (kkrueger@geo.uio.no)

Contents of this file

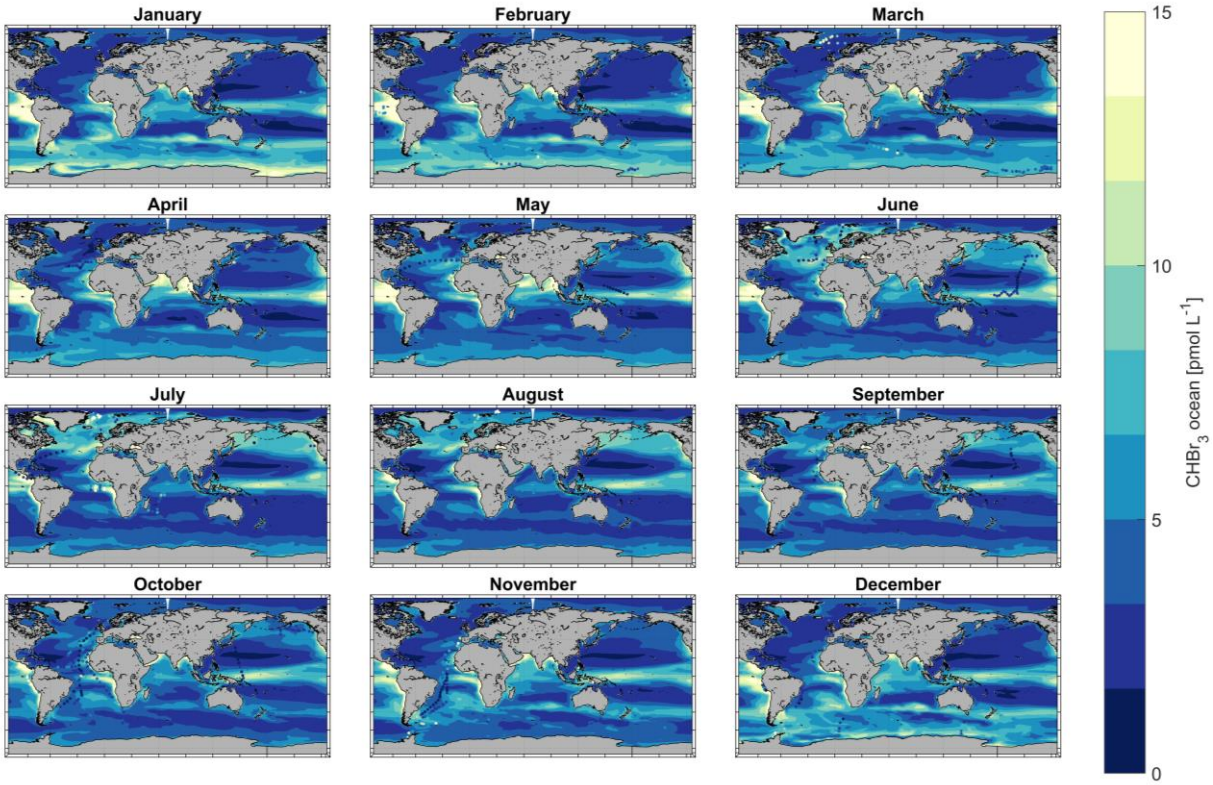

Figure S1: Monthly resolved daily mean oceanic bromoform concentrations from HalOcAt on top of monthly mean oceanic bromoform data (1990-2014) from NorESM2.

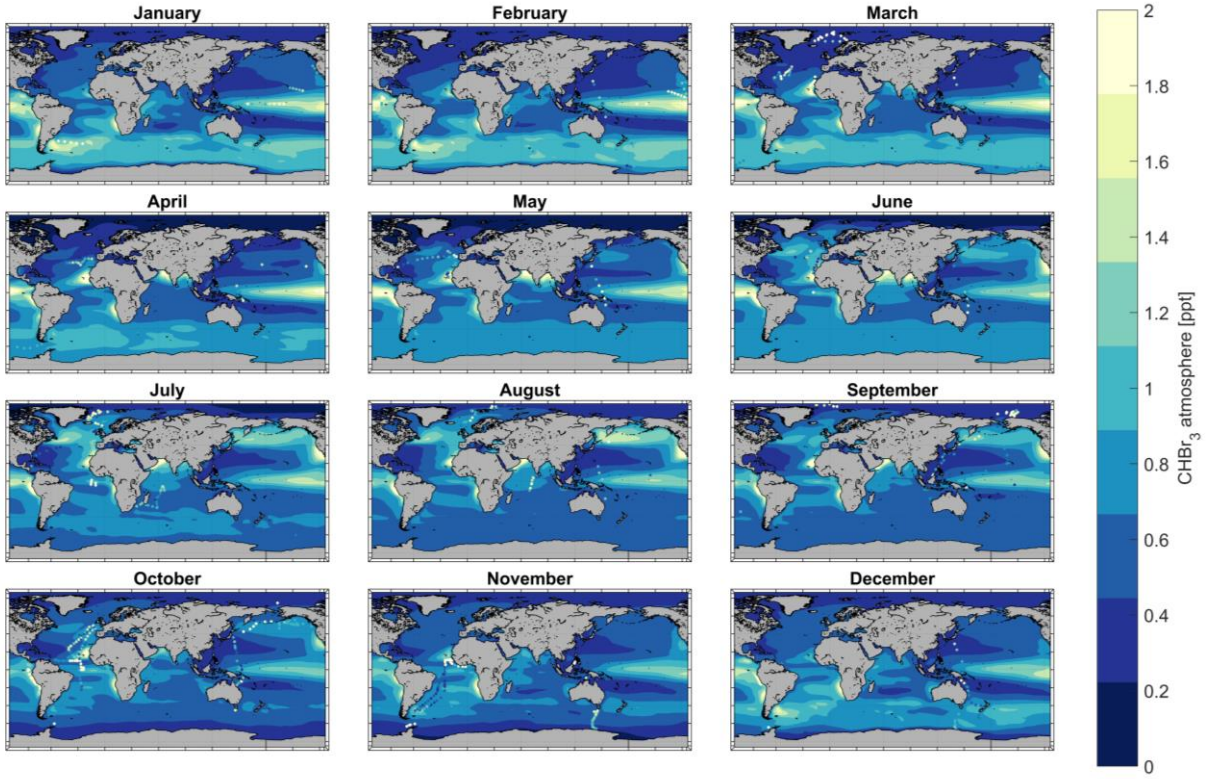

Figure S2: Monthly resolved daily mean atmospheric bromoform mixing ratios from HalOcAt on top of monthly mean atmospheric bromoform data (1990-2014) from NorESM2.

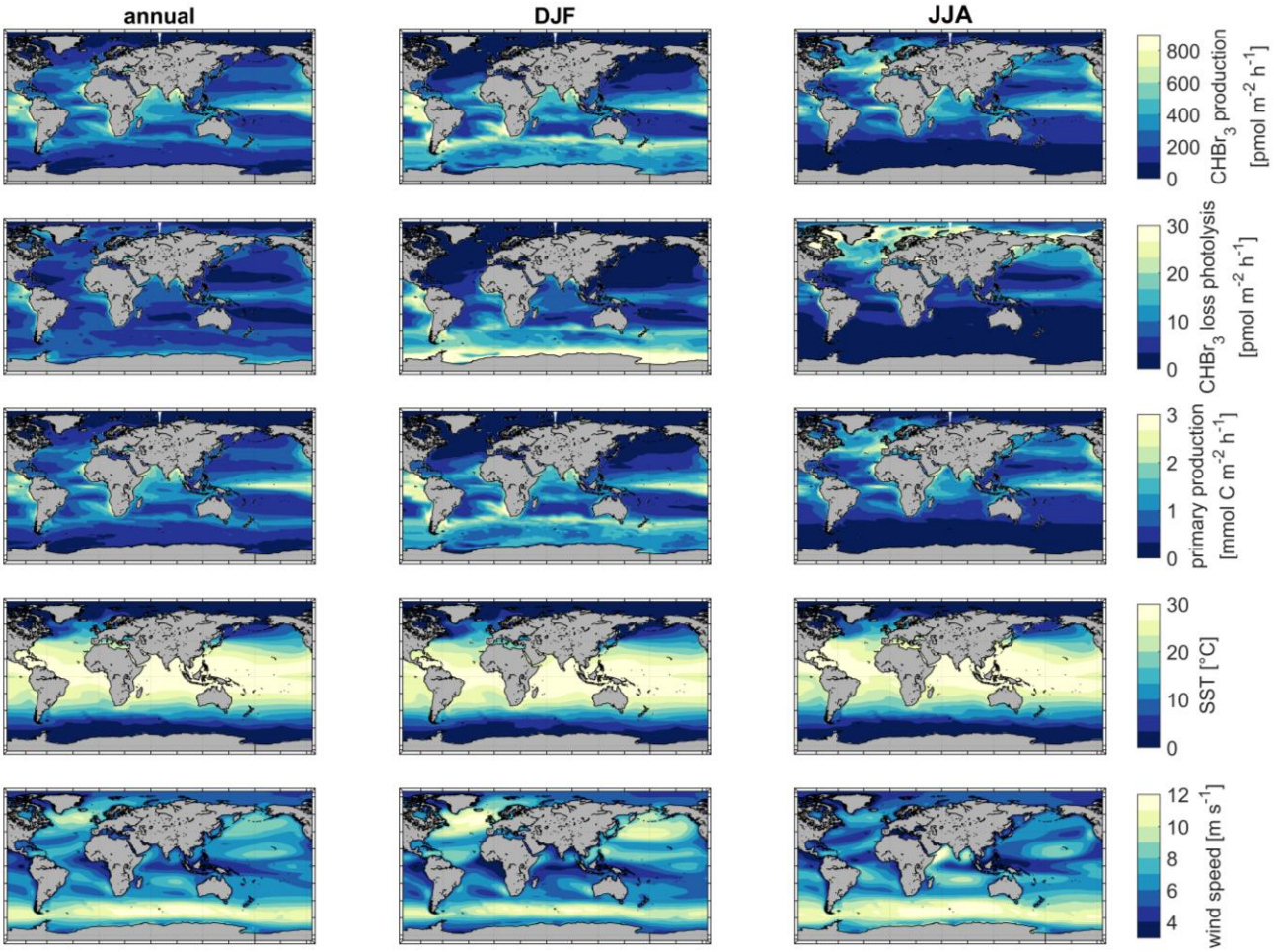

Figure S3: Annual (left), DJF (middle) and JJA (right) mean oceanic surface integrated bromoform production rates (upper panel), bromoform loss rates due to photolysis (second upper panel), integrated primary production (middle panel), SST (second lower panel) and wind speed (lower panel) from NorESM2.

Table S1: Annual and seasonal coefficients of the main predictors (driving factor) for each MLR in the different case studies. If the highest coefficient was not significantly different to the second or third highest coefficient, more than one coefficient including the respective parameters are listed. Atm: atmospheric mixing ratio, Prod: bromoform production, Ocean: ocean concentration, SST: sea surface temperature, WS: wind speed.

	Season	North Atlantic		Tropical West Pacific		Southern Ocean	
		Parameter	Coefficient	Parameter	Coefficient	Parameter	Coefficient
Ocean concentration	Annual	Atm	0.68	WS	-0.96	Atm	0.60
	DJF	Atm	0.98	WS	-0.95	Atm	0.80
	MAM	Prod | Atm	0.64 | 0.41	WS	-0.92	Prod	0.82
	JJA	Atm | Prod	1.15 | 0.86	Atm | Prod	-0.58 | 0.49	Atm	1.26
	SON	Prod	0.72	Prod	0.85	SST	-0.75
Atmospheric mixing ratio	Annual	Ocean	0.93	WS	0.94	Ocean	1.07
	DJF	SST	1.01	WS	0.93	Ocean	1.00
	MAM	Ocean	1.33	WS	0.92	SST	0.92
	JJA	SST | Ocean	0.59 | 0.53	WS | Ocean	0.51 | 0.42	SST	0.67
	SON	Ocean	0.79	WS	0.77	Ocean	1.62
Bromoform emissions	Annual	Ocean	0.83	WS	1.27	Atm	-1.22
	DJF	SST | Atm	2.05 | -1.26	WS	1.55	SST	1.16
	MAM	Prod | SST | WS	0.79 | 0.67 | 0.63	WS	1.31	Ocean	0.59
	JJA	WS | Ocean	0.60 | 0.60	WS | SST	0.68 | 0.52	Atm	-0.88
	SON	SST	0.81	WS	1.11	Atm	-1.00