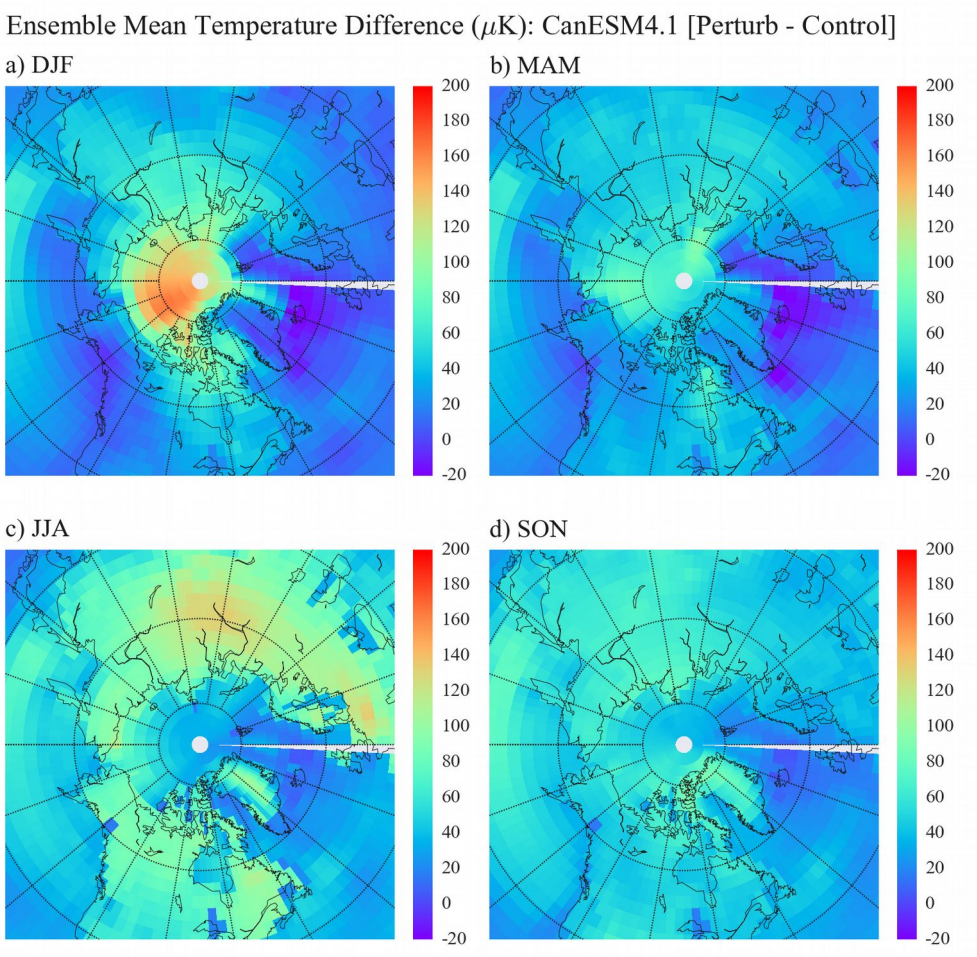
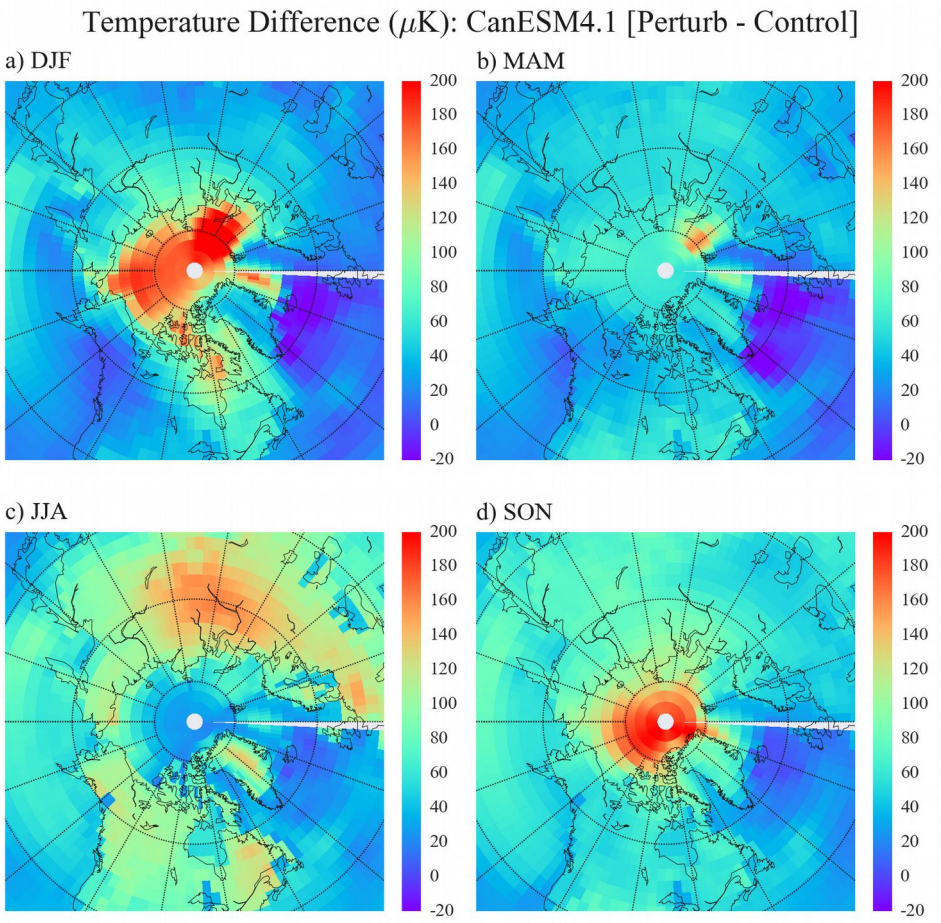
Transient



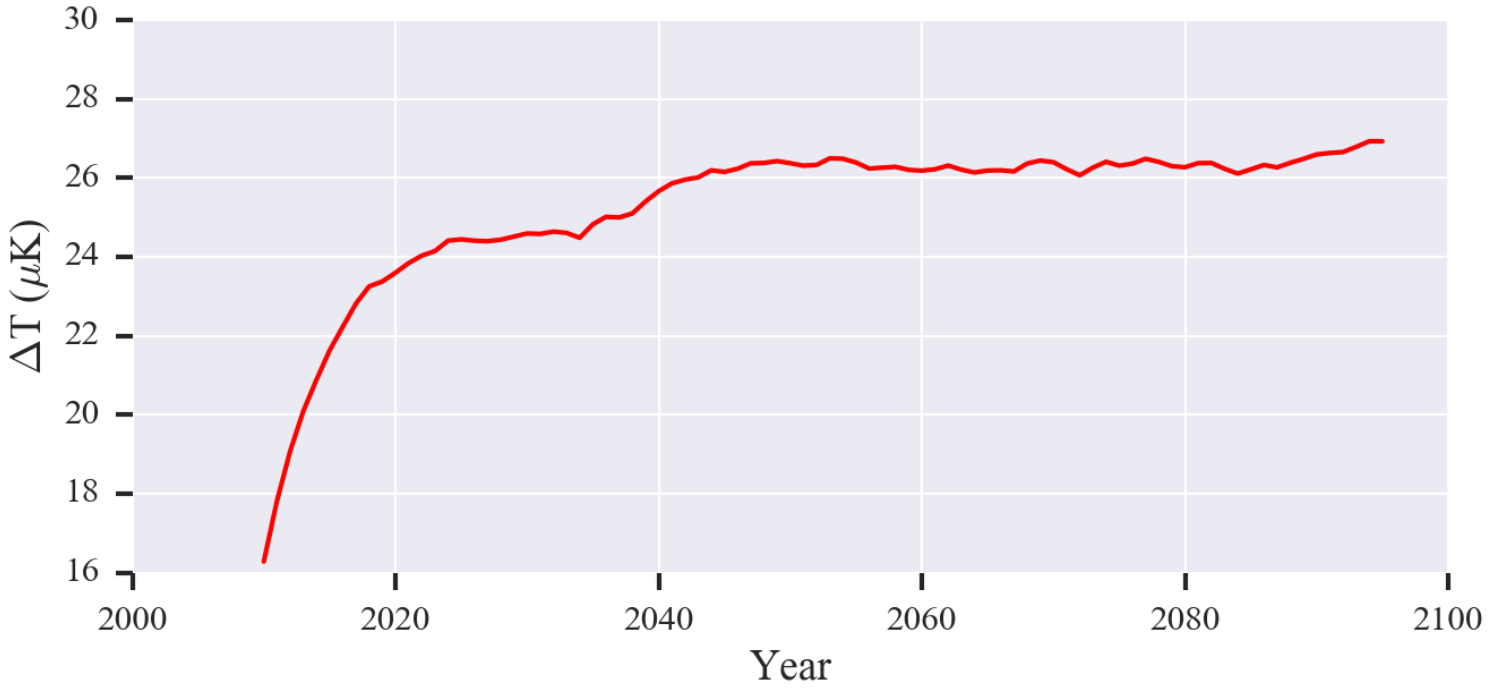
Non-transient

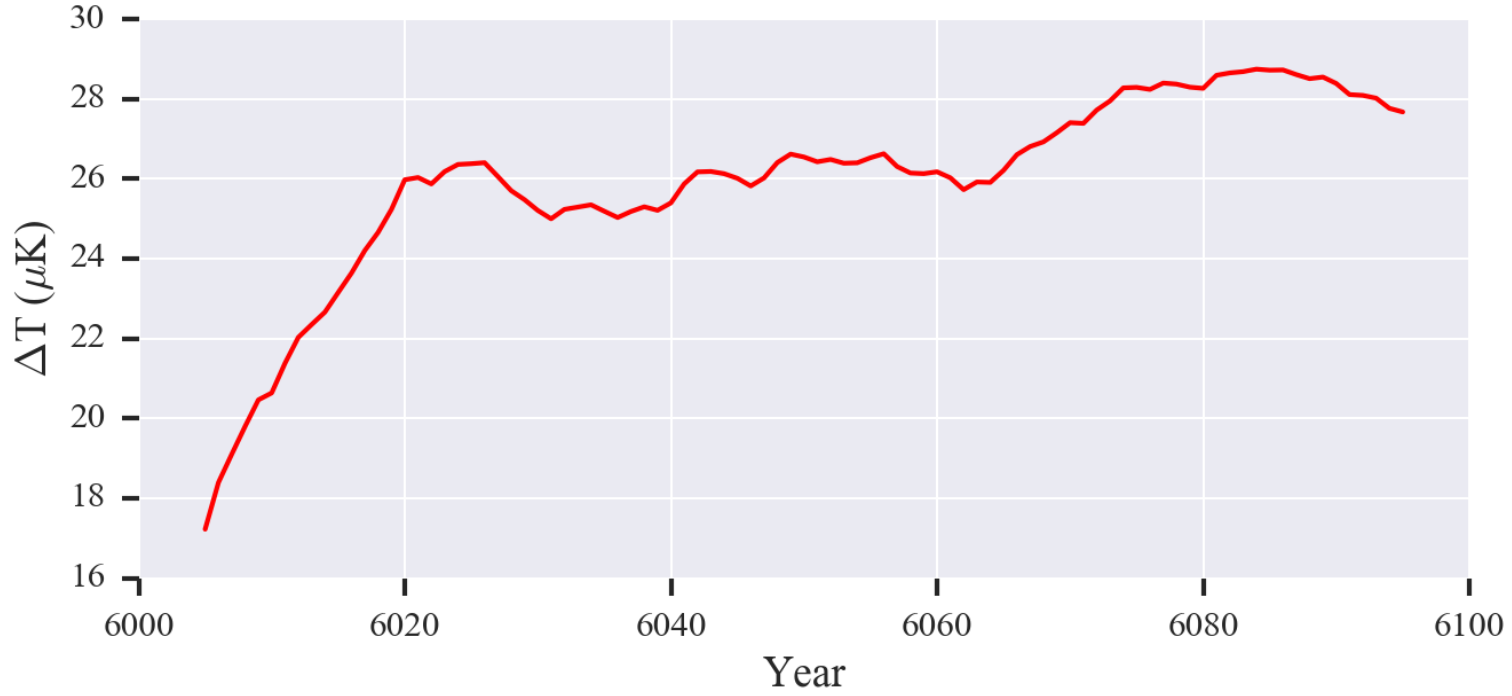


1) All the results are scaled back to the original emissions (i.e. divided by 100,000),

2) For transient run, four ensemble members were used for this analysis as the 5th perturbed member has less 10 years of data (i.e. 2006 – 2090),

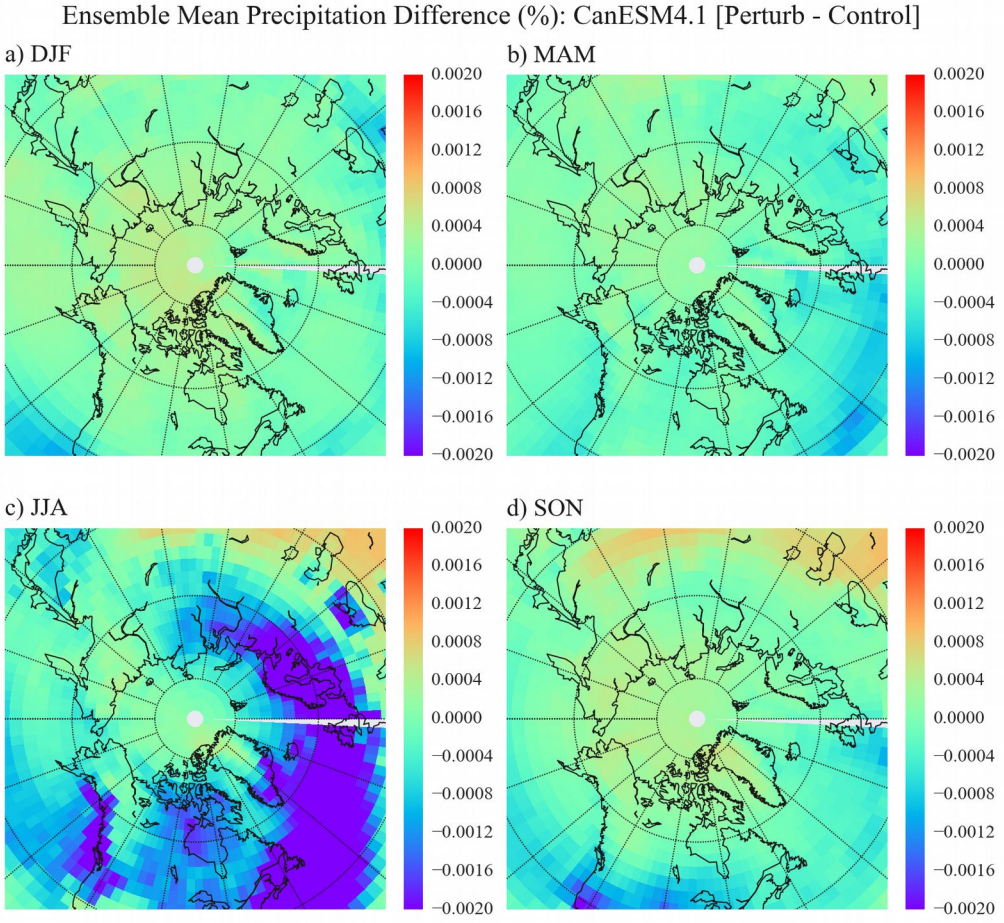
3) Time-series are 10 years running mean for global average value,
4) Lat-lon plots were calculated using last 50 years average.

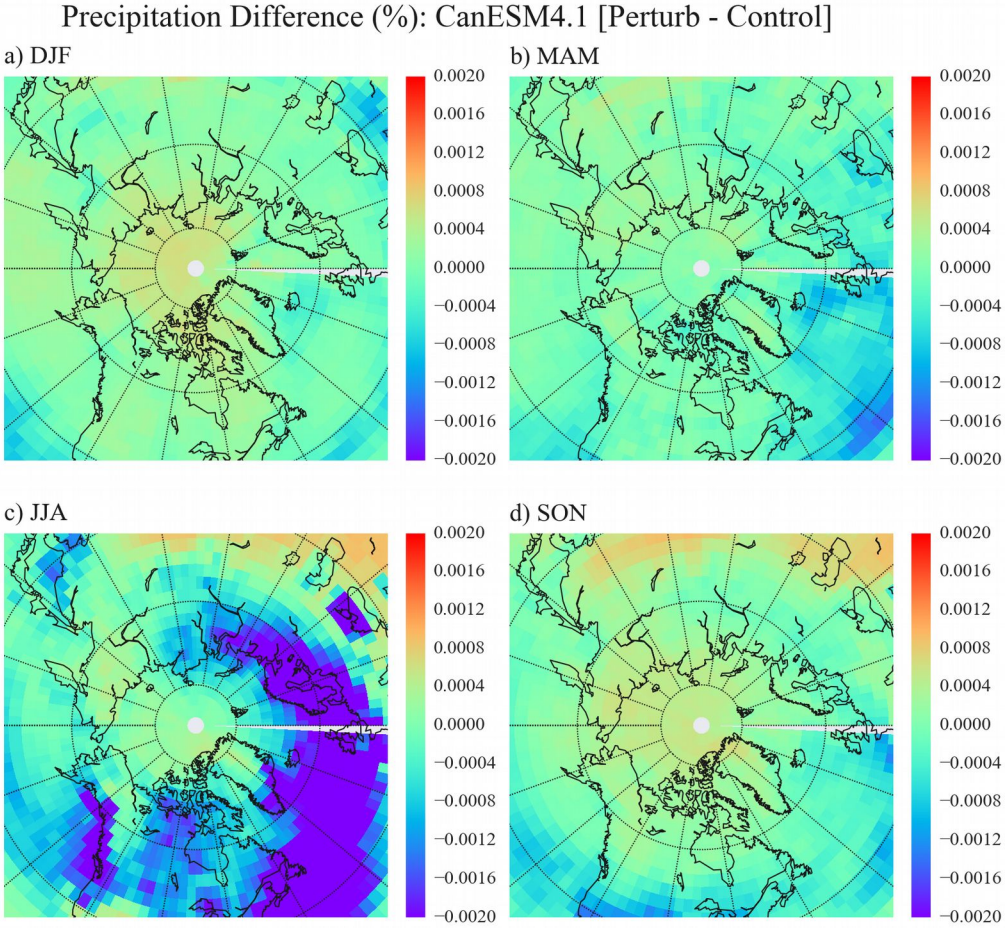

30
28
26
24
22
20
18
16
ΔT (μK)
2000
2020
2040
2060
2080
2100
Year

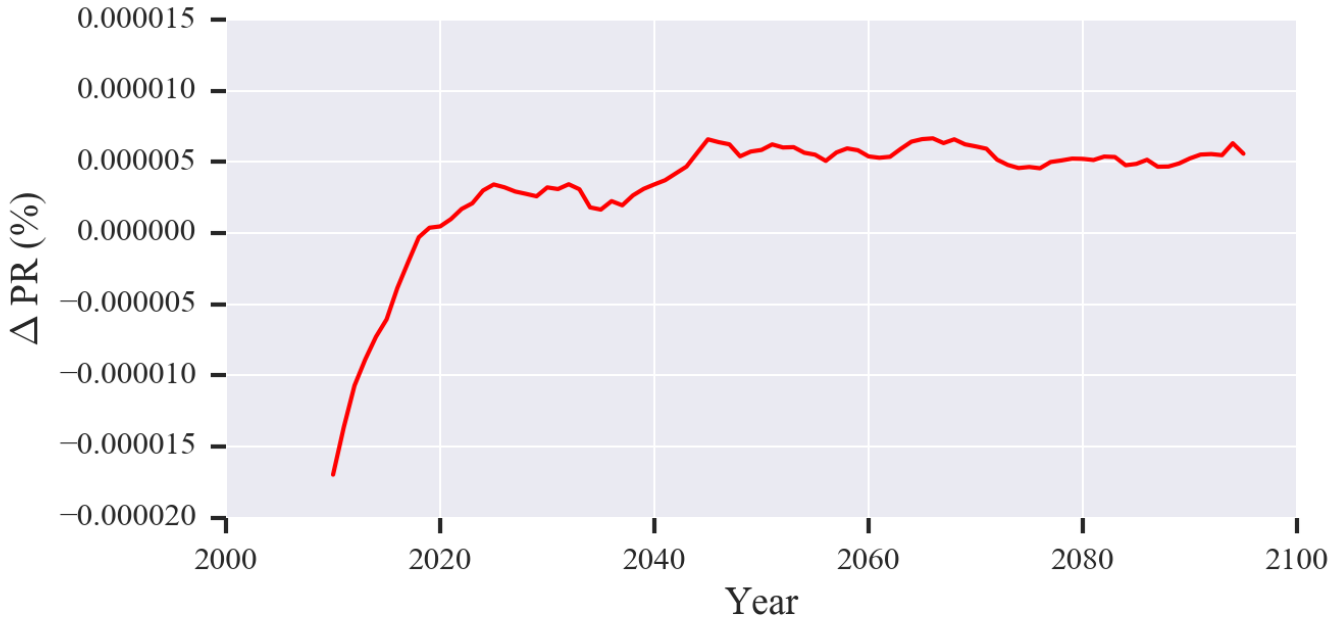

30
28
26
24
22
20
18
16
ΔT (μK)
6000
6020
6040
6060
6080
6100
Year

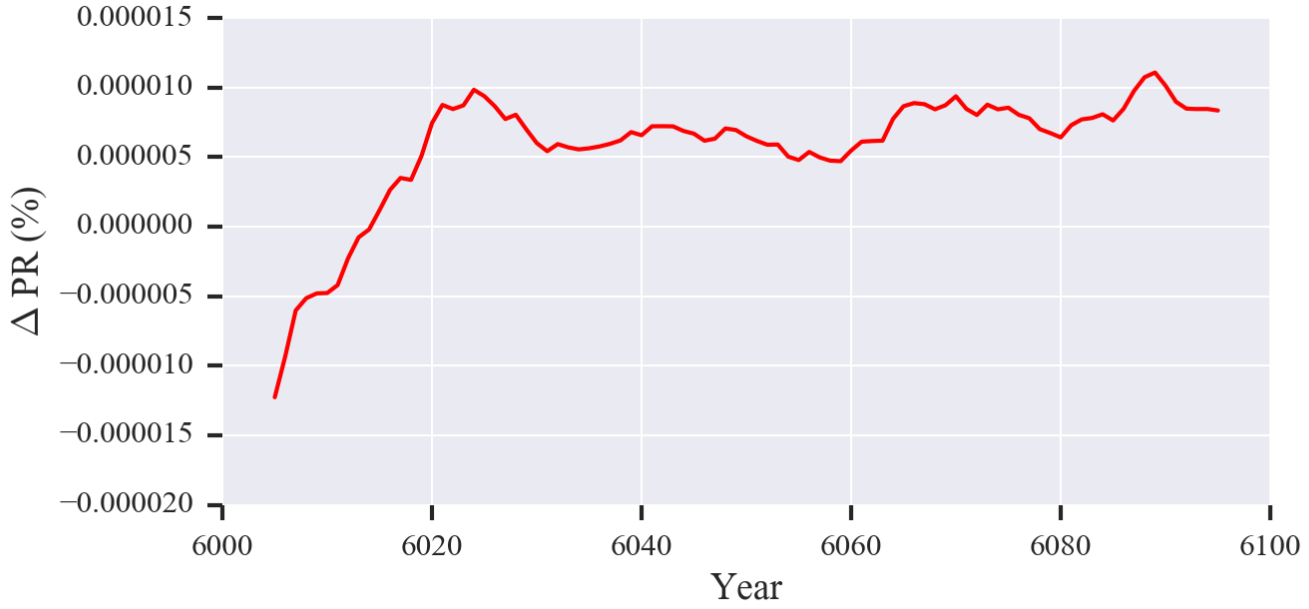
Transient

Non-transient

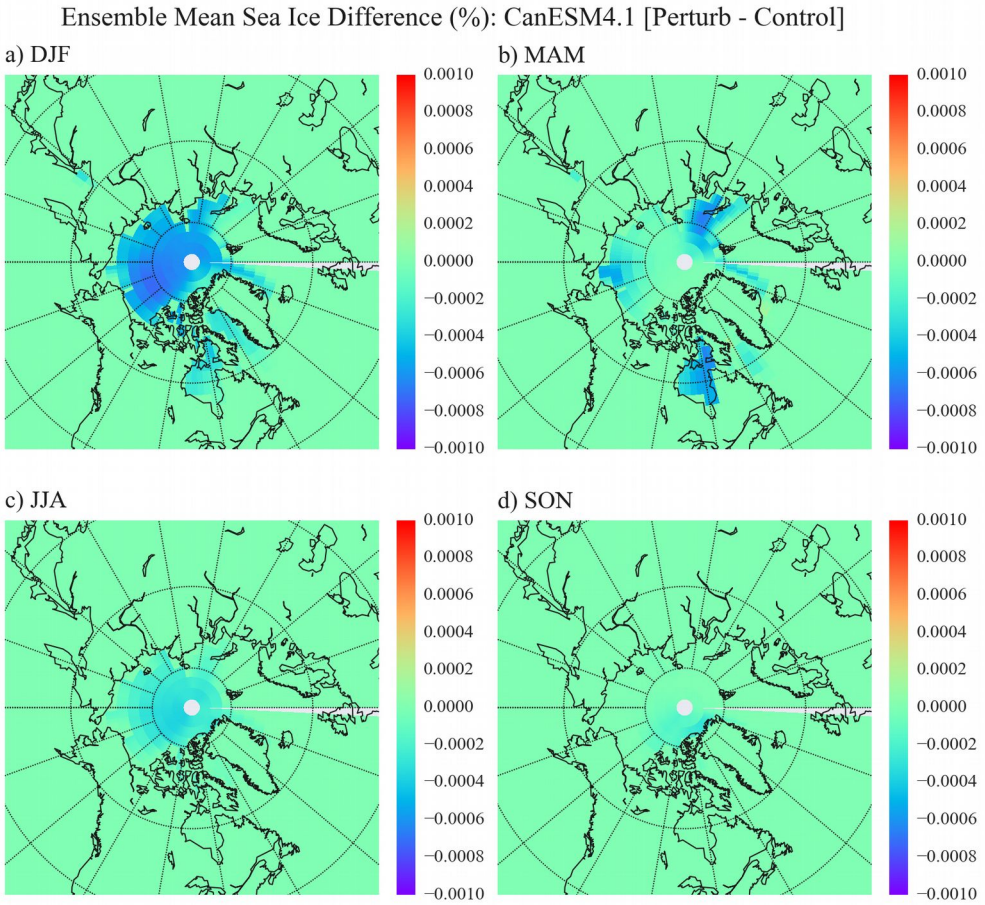




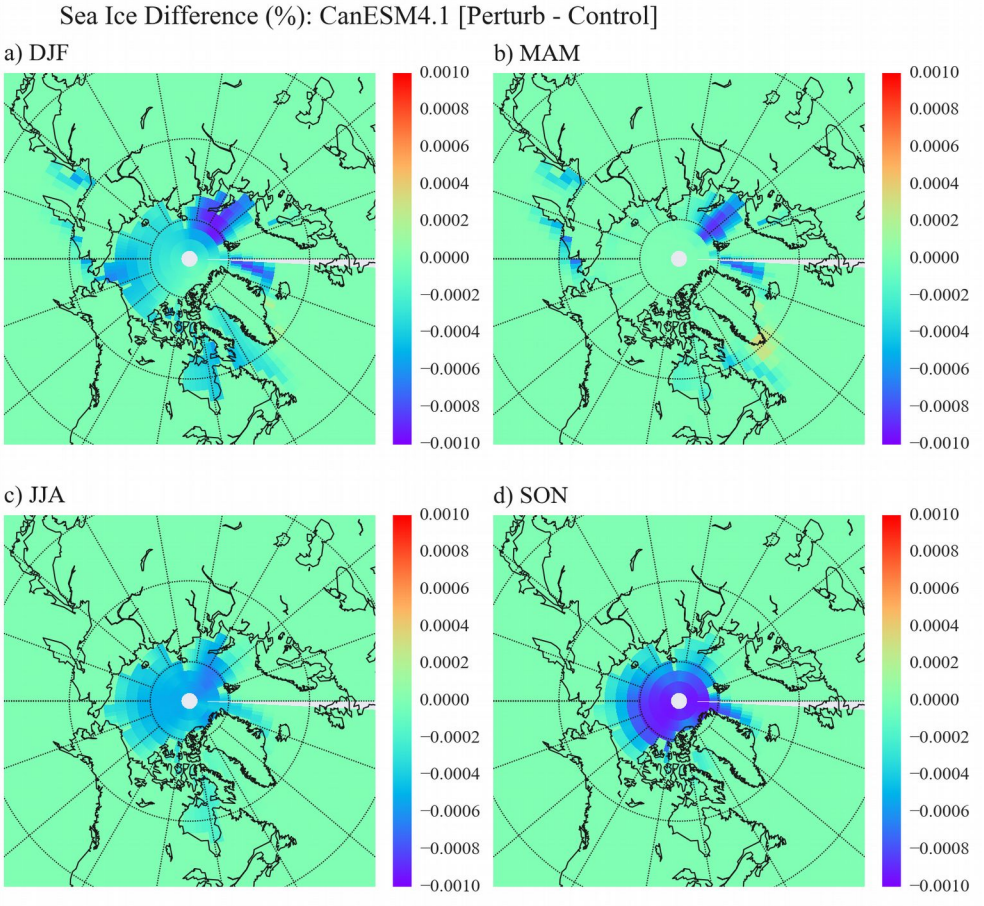

0.000015
0.000010
0.000005
0.000000
−0.000005
−0.000010
−0.000015
−0.000020
Δ PR (%)
2000
2020
2040
2060
2080
2100
Year

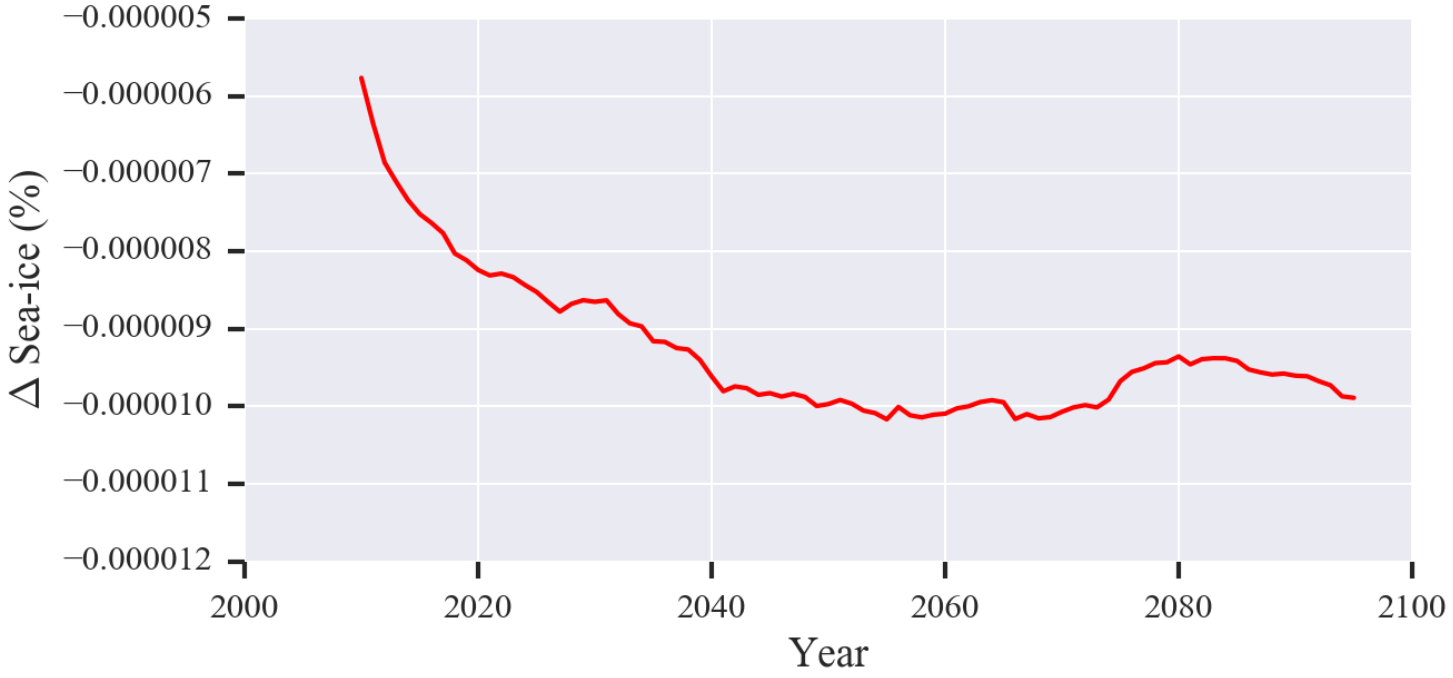

0.000015
0.000010
0.000005
0.000000
−0.000005
−0.000010
−0.000015
−0.000020
Δ PR (%)
6000
6020
6040
6060
6080
6100
Year

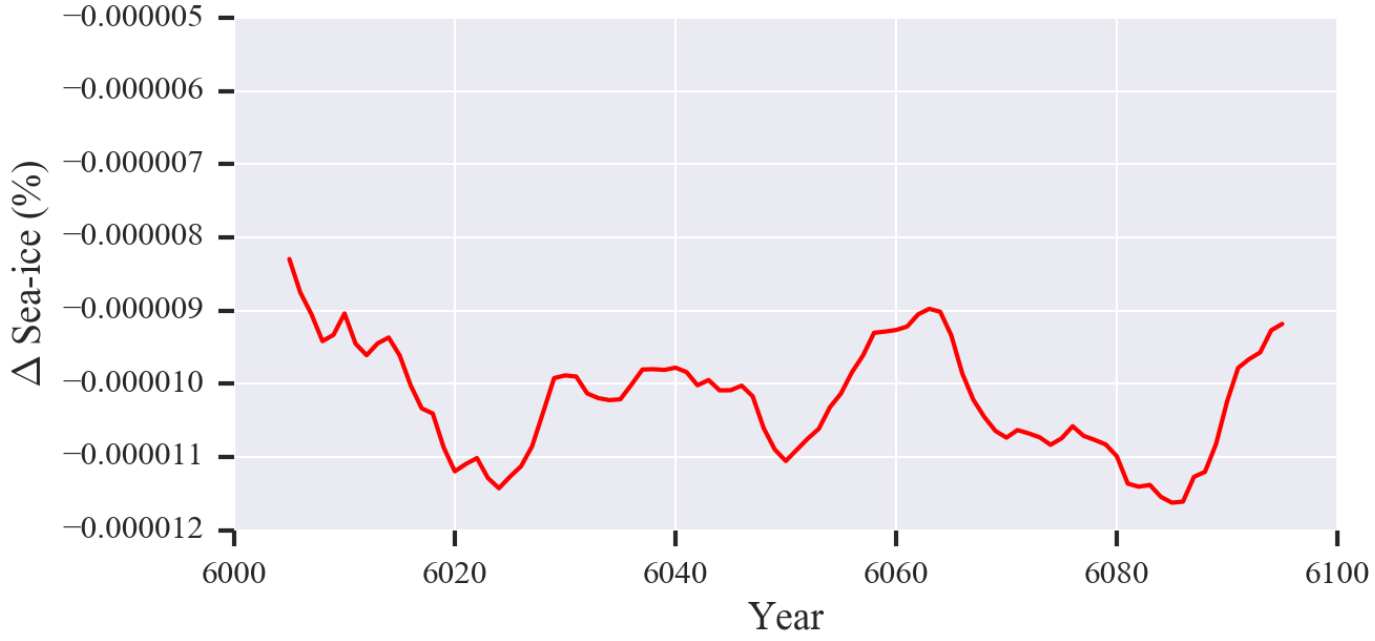
Transient



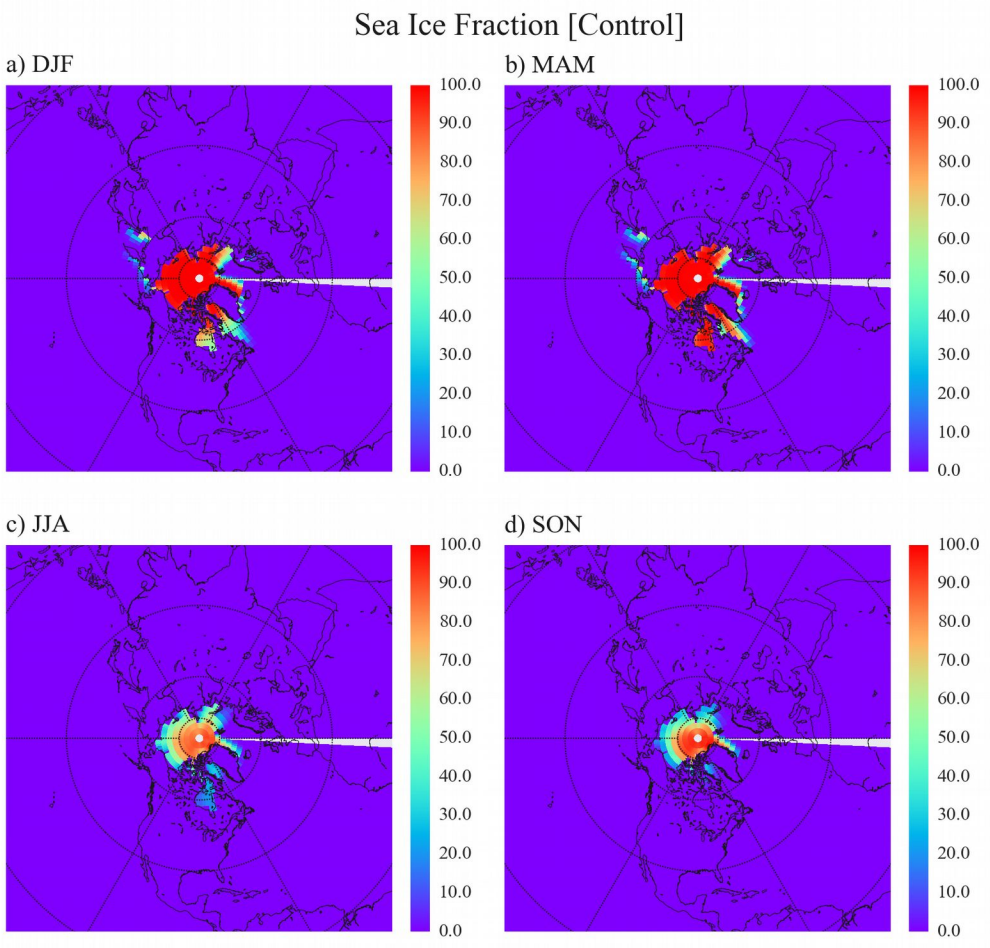
Non-transient

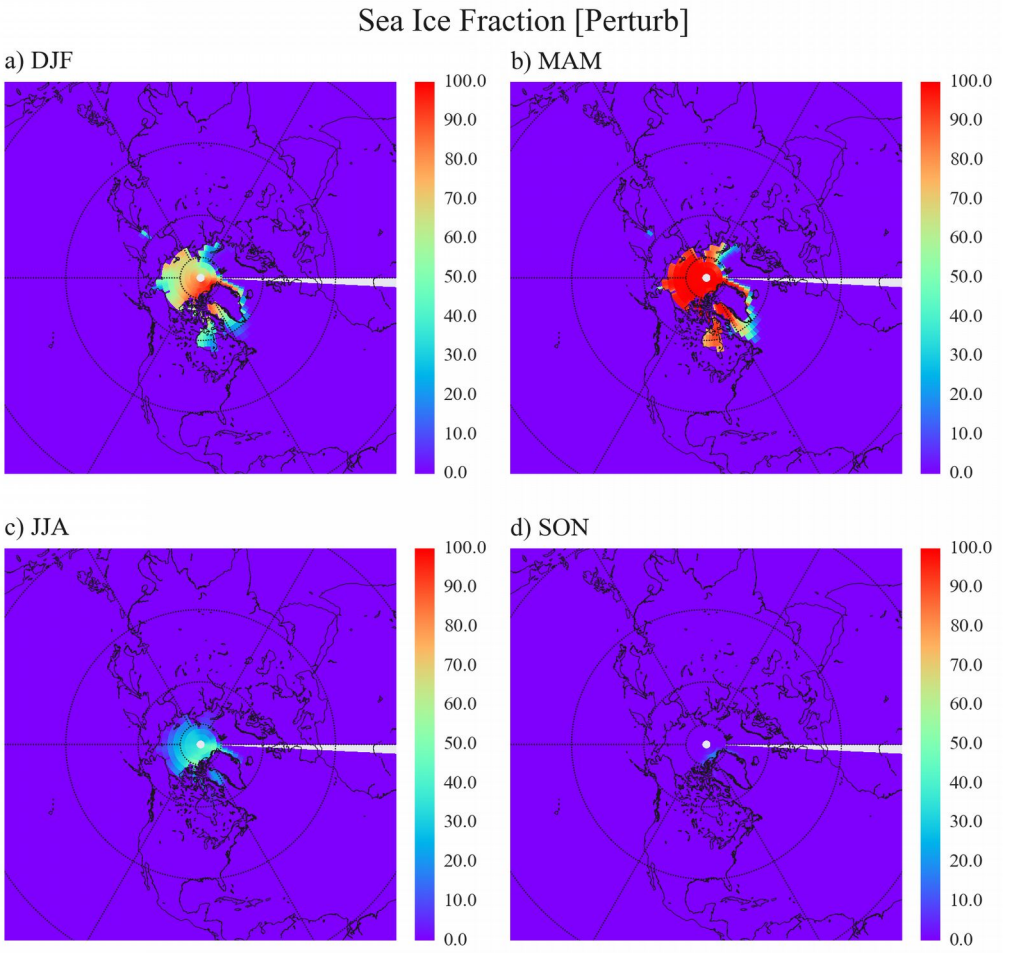



−0.000005
−0.000006
−0.000007
−0.000008
−0.000009
−0.000010
−0.000011
−0.000012
Δ Sea-ice (%)
2000
2020
2040
2060
2080
2100
Year

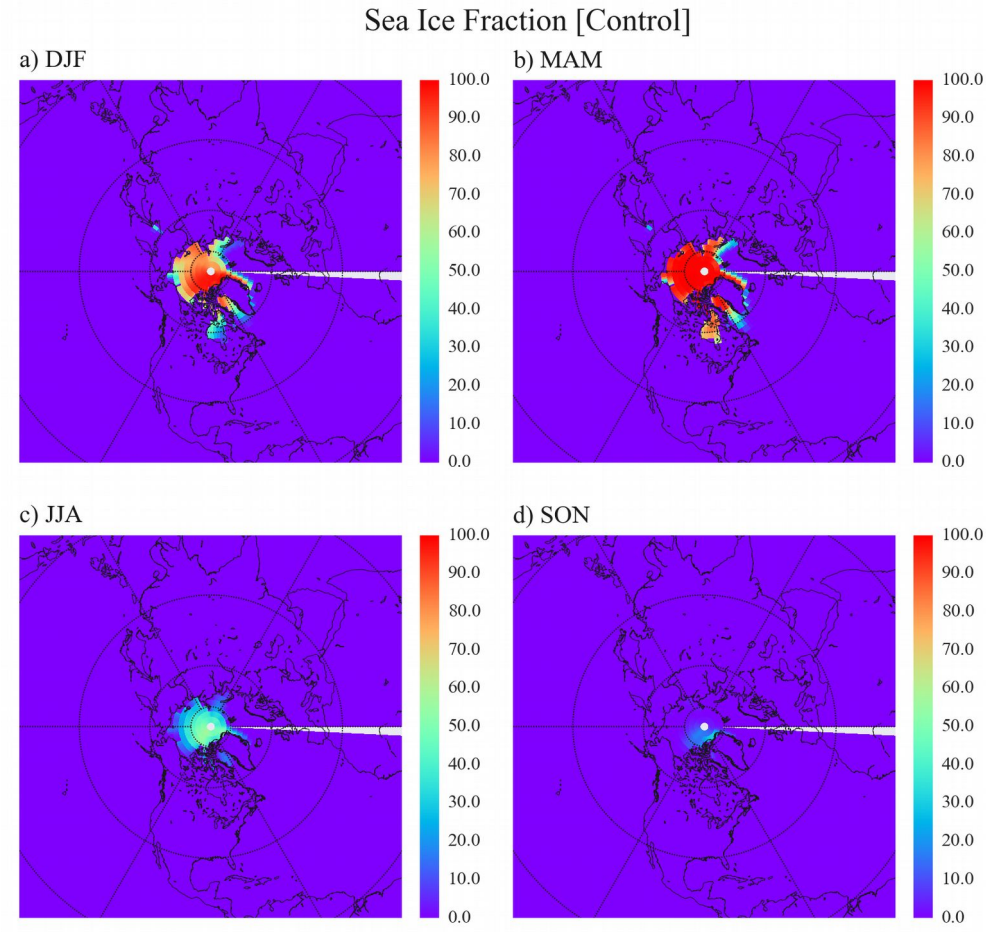

−0.000005
−0.000006
−0.000007
−0.000008
−0.000009
−0.000010
−0.000011
−0.000012
Δ Sea-ice (%)
6000
6020
6040
6060
6080
6100
Year

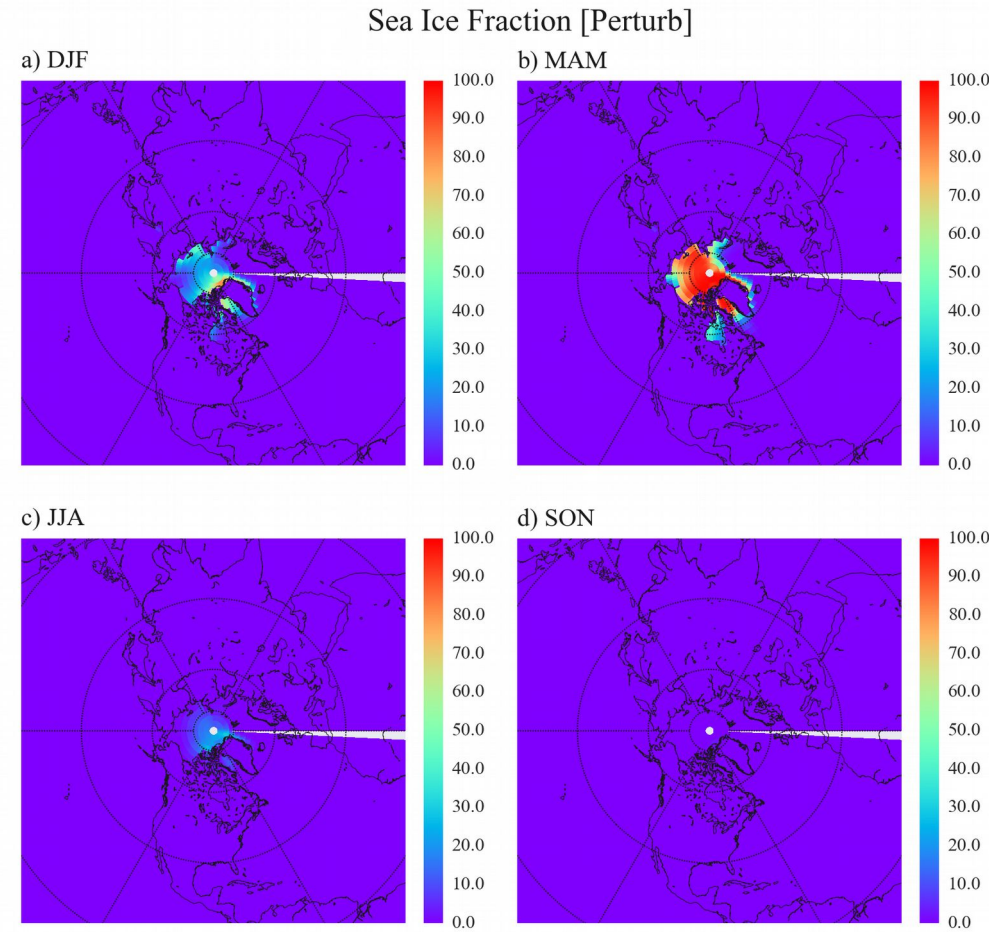
Non-transient





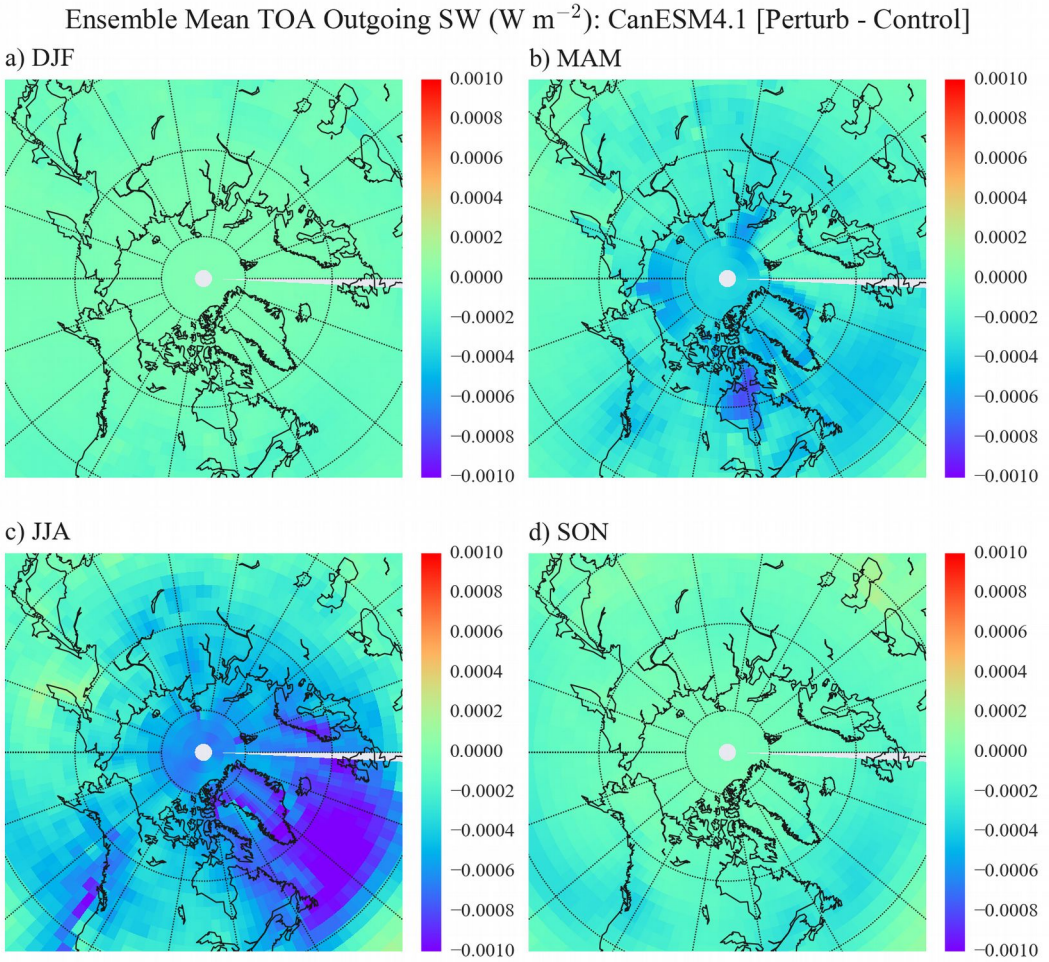
Transient

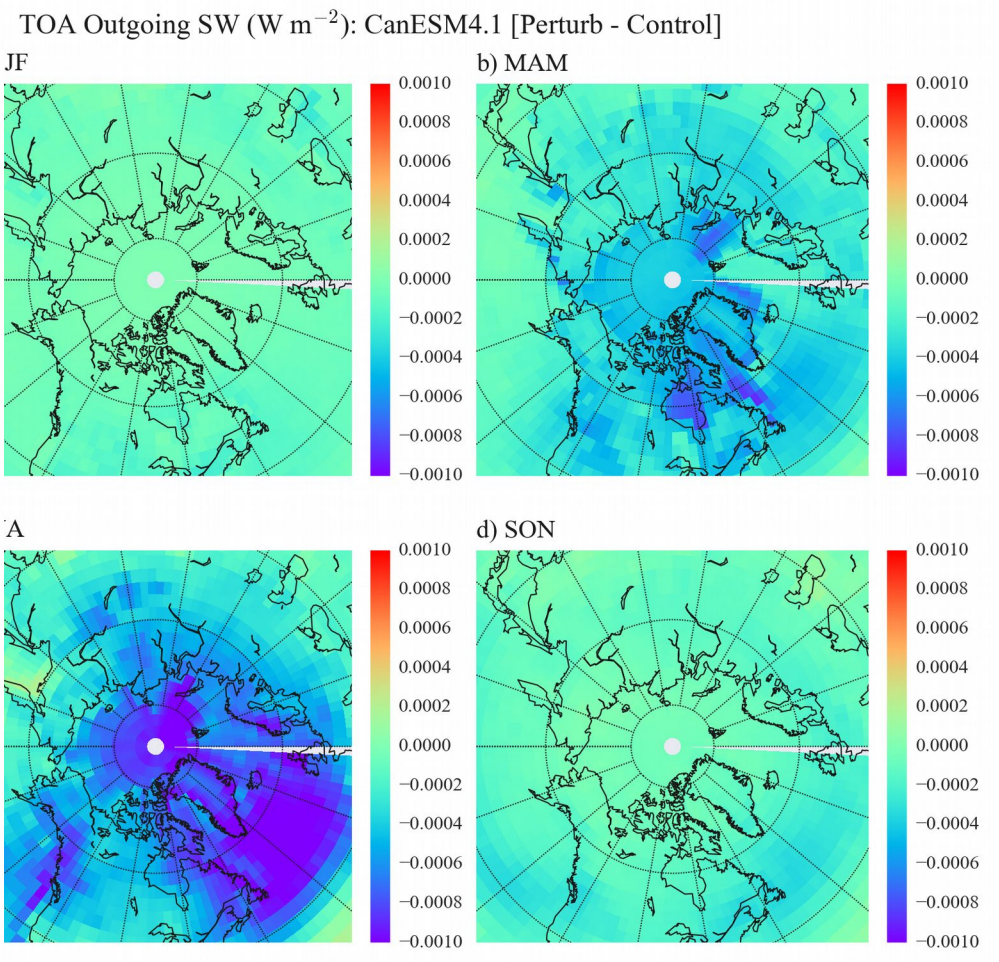

Sea Ice Fraction [Control]
a) DJF
b) MAM
c) JJA
d) SON
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0

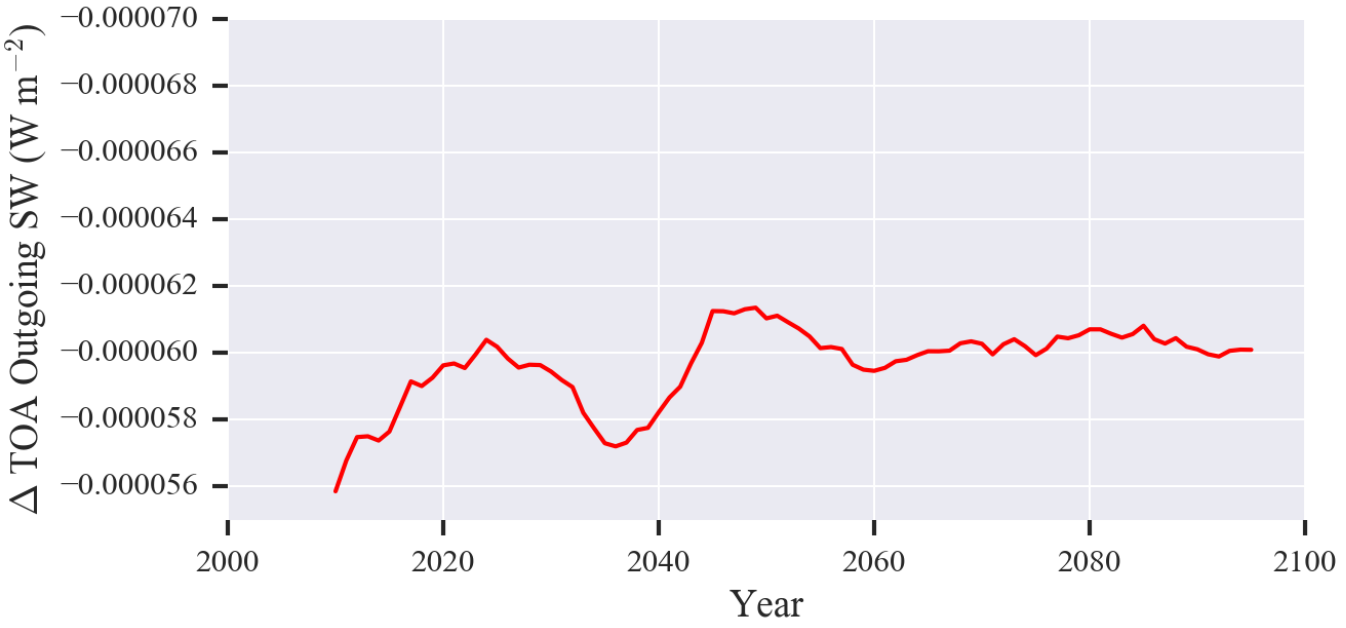

Sea Ice Fraction [Perturb]
a) DJF
b) MAM
c) JJA
d) SON
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0

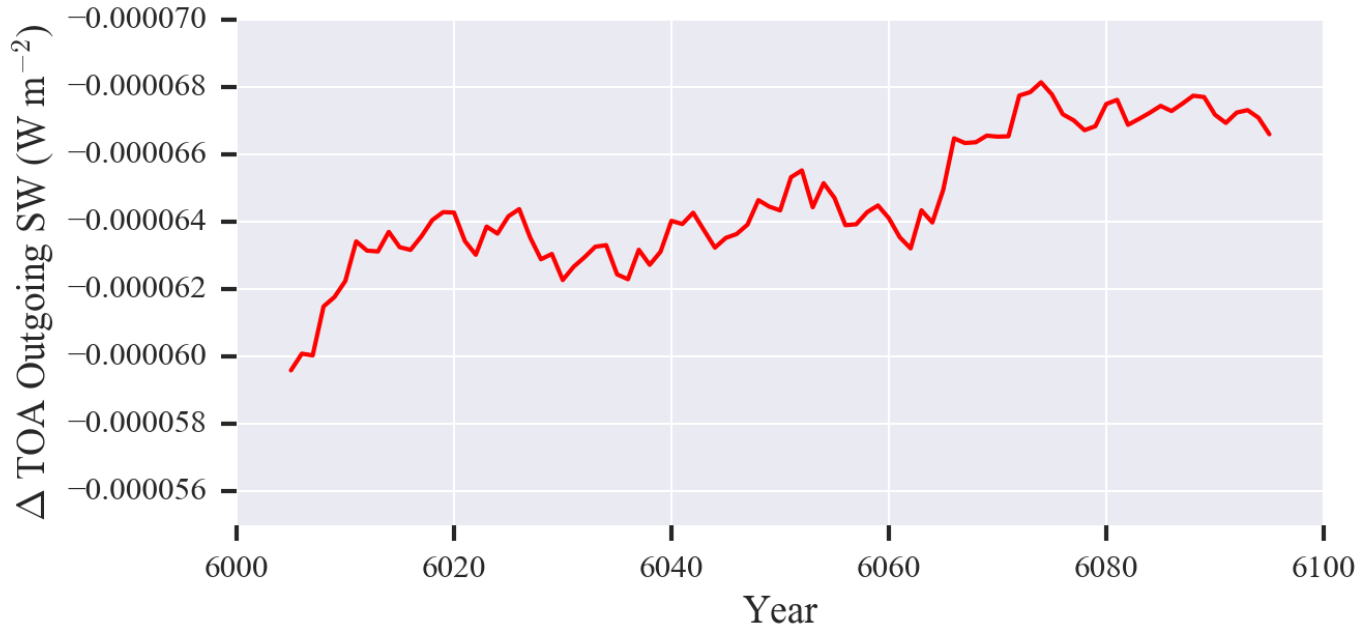
Transient

Non-transient

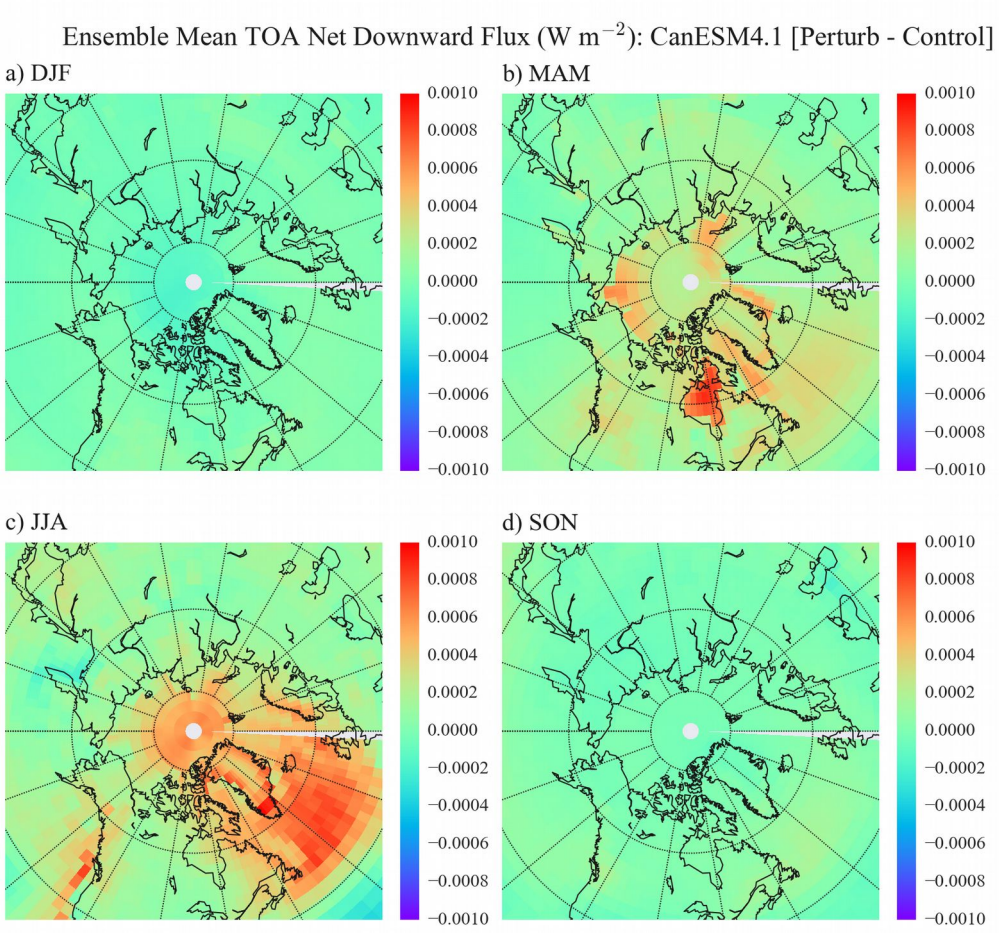




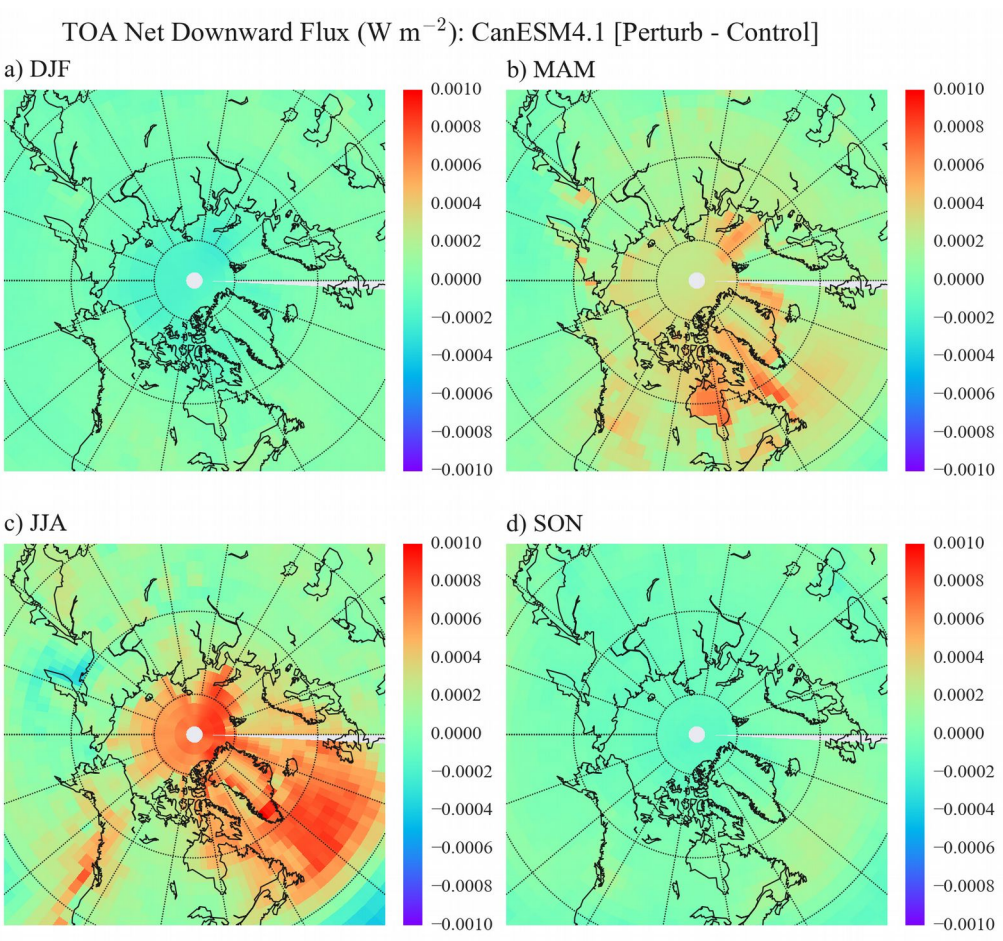

−0.000070
−0.000068
−0.000066
−0.000064
−0.000062
−0.000060
−0.000058
−0.000056
Δ TOA Outgoing SW (W m^{-2})
2000
2020
2040
2060
2080
2100
Year

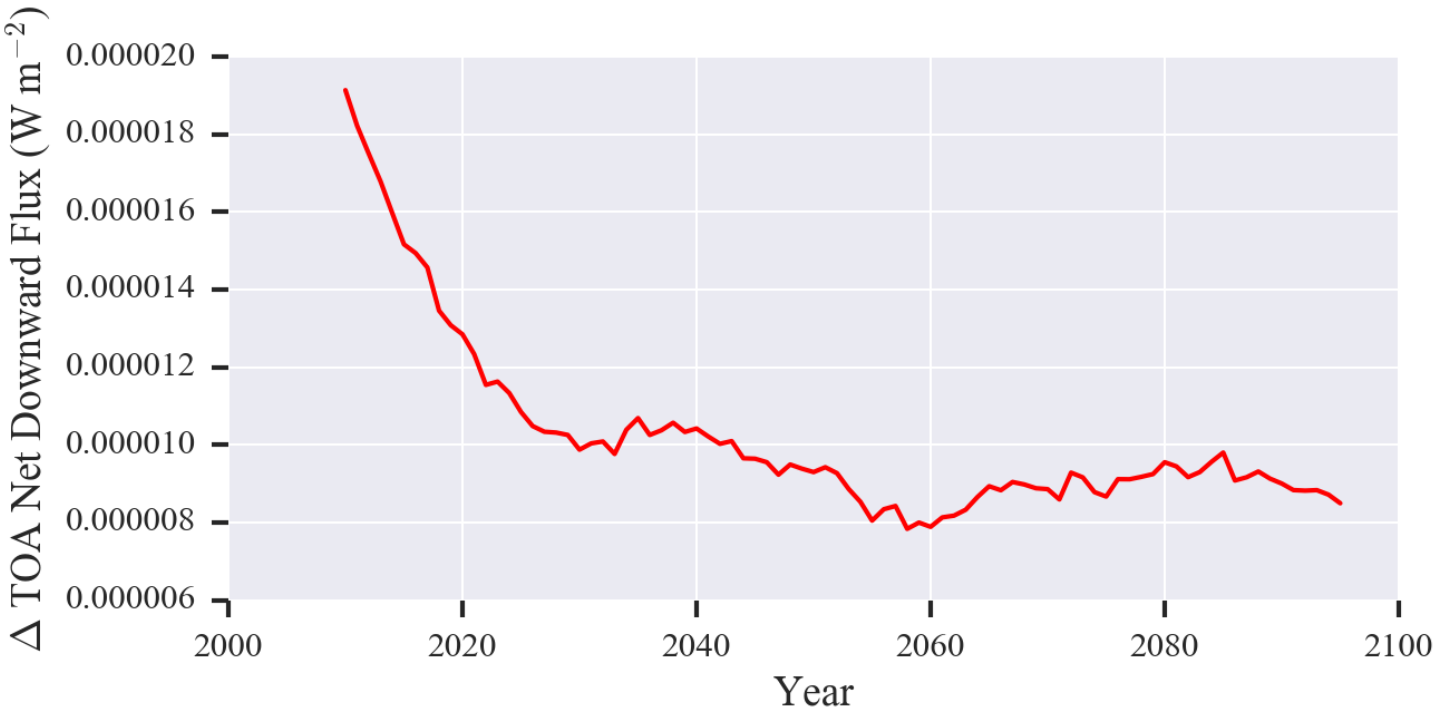

−0.000070
−0.000068
−0.000066
−0.000064
−0.000062
−0.000060
−0.000058
−0.000056
Δ TOA Outgoing SW (W m^{-2})
6000
6020
6040
6060
6080
6100
Year

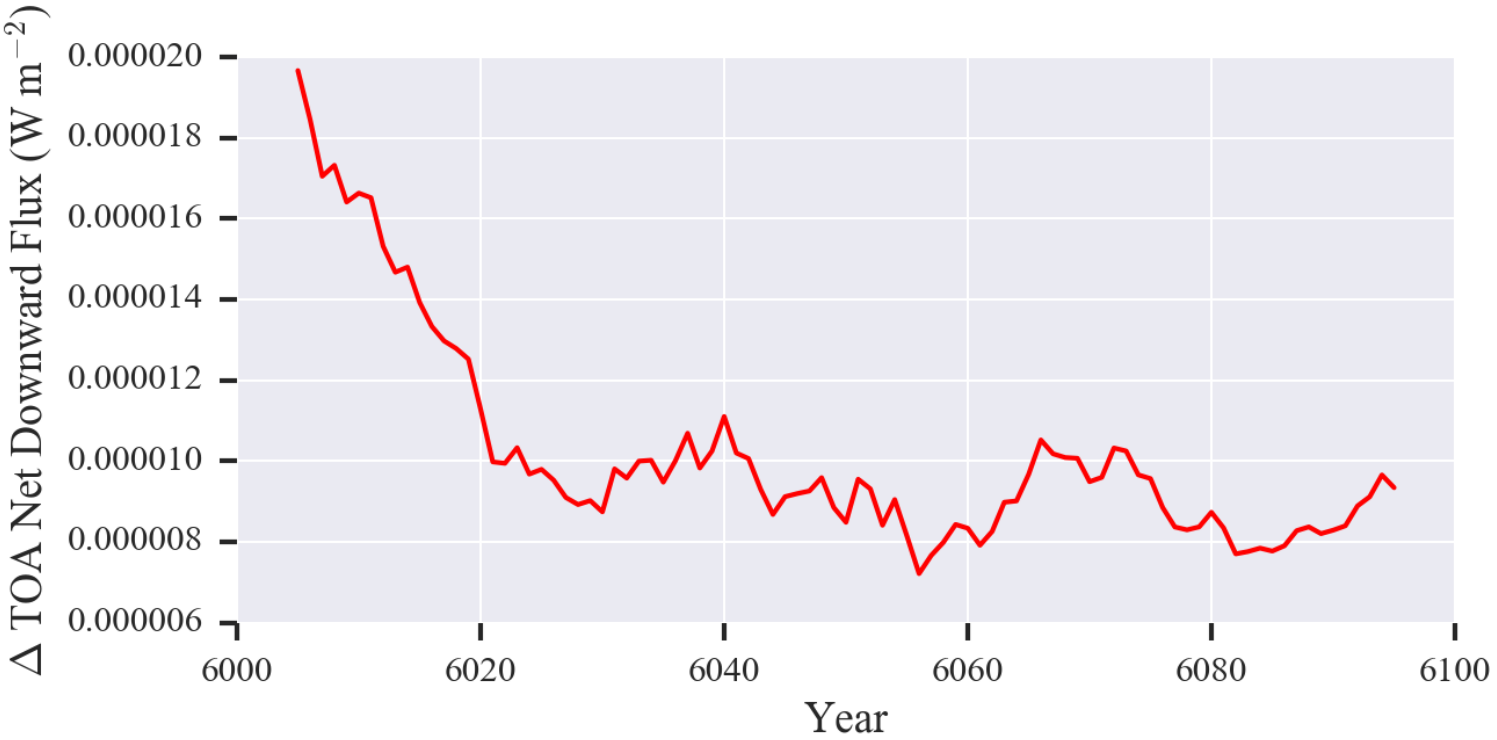
Transient



Non-transient

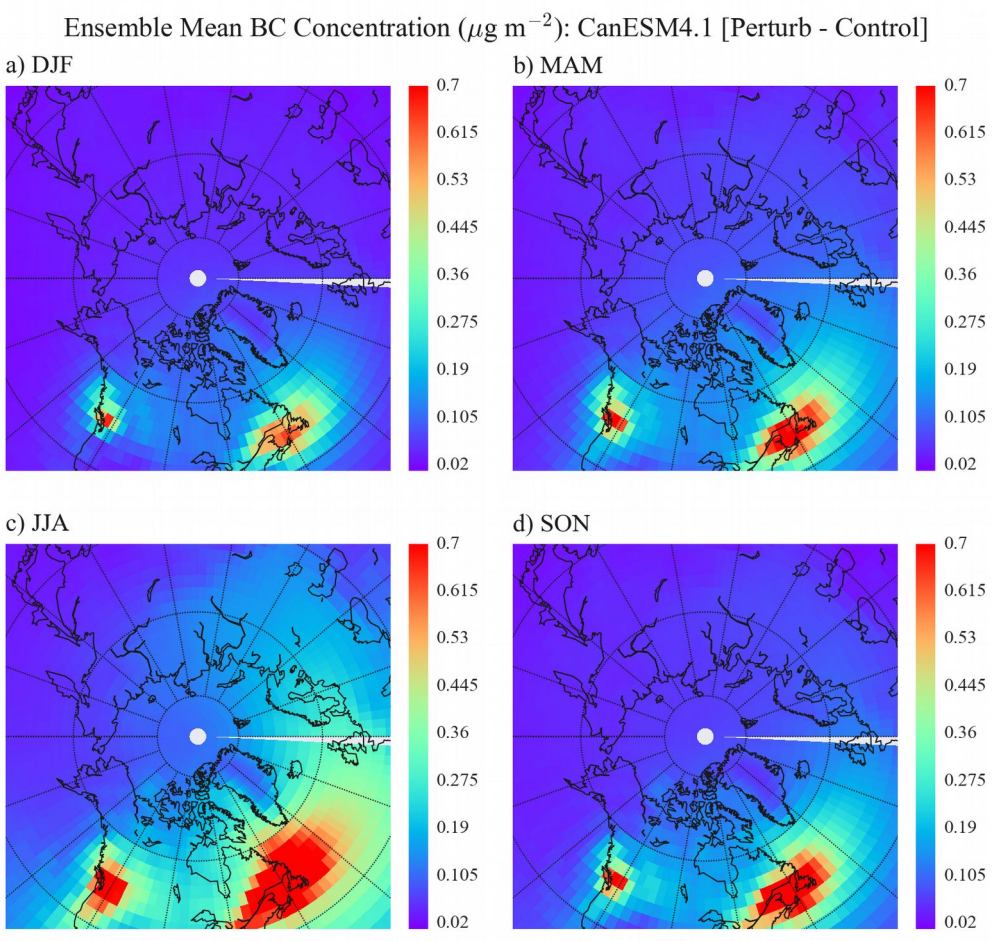


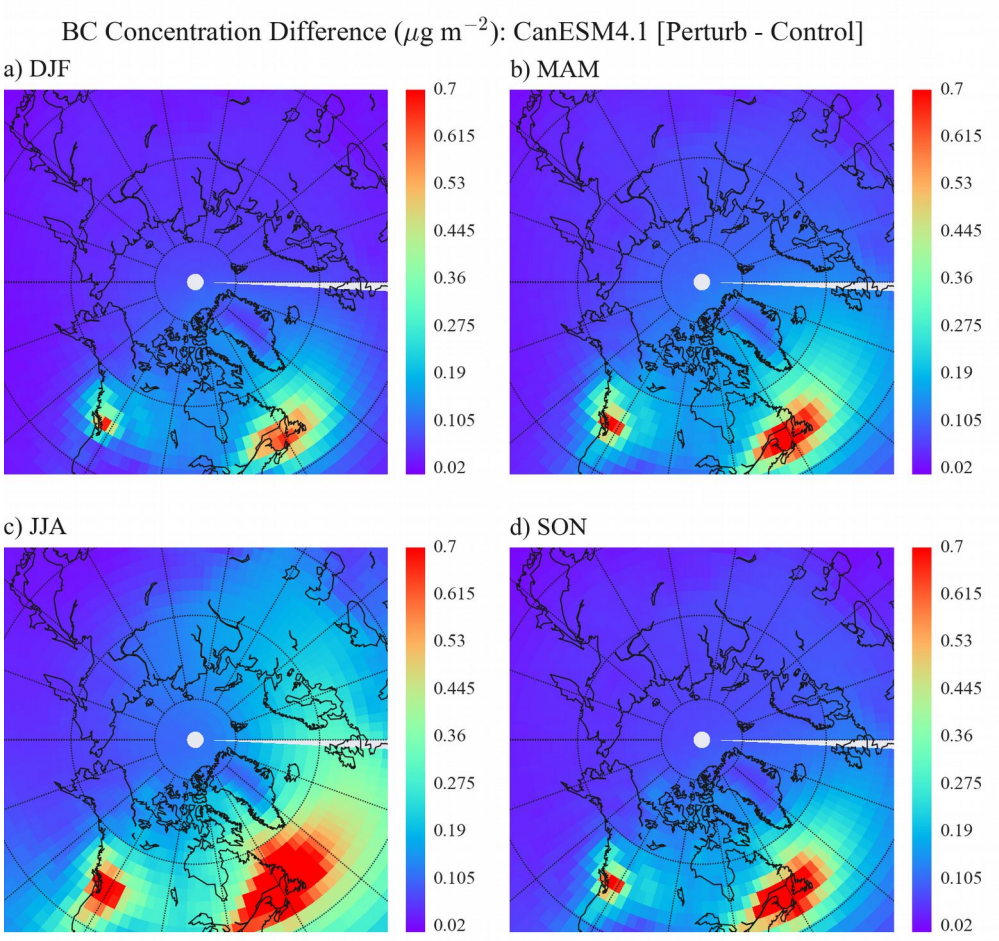

Δ TOA Net Downward Flux (W m^{-2})
0.000020
0.000018
0.000016
0.000014
0.000012
0.000010
0.000008
0.000006
2000
2020
2040
2060
2080
2100
Year

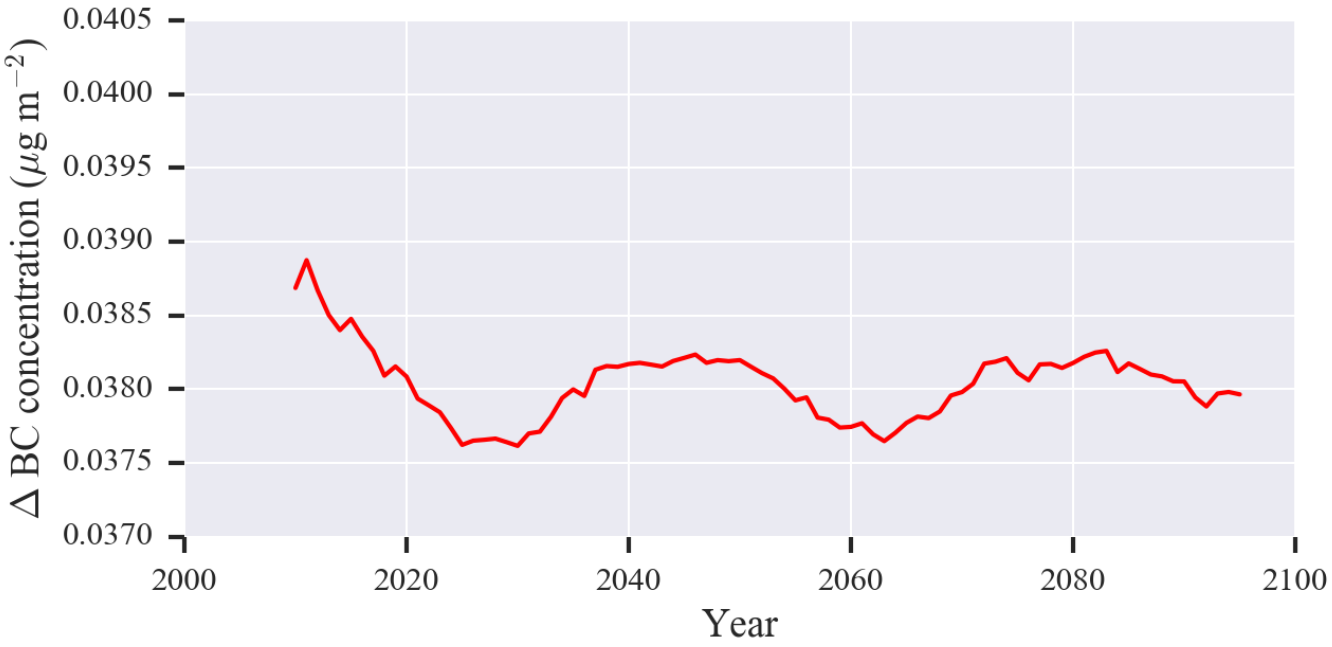

Δ TOA Net Downward Flux (W m^{-2})
0.000020
0.000018
0.000016
0.000014
0.000012
0.000010
0.000008
0.000006
6000
6020
6040
6060
6080
6100
Year

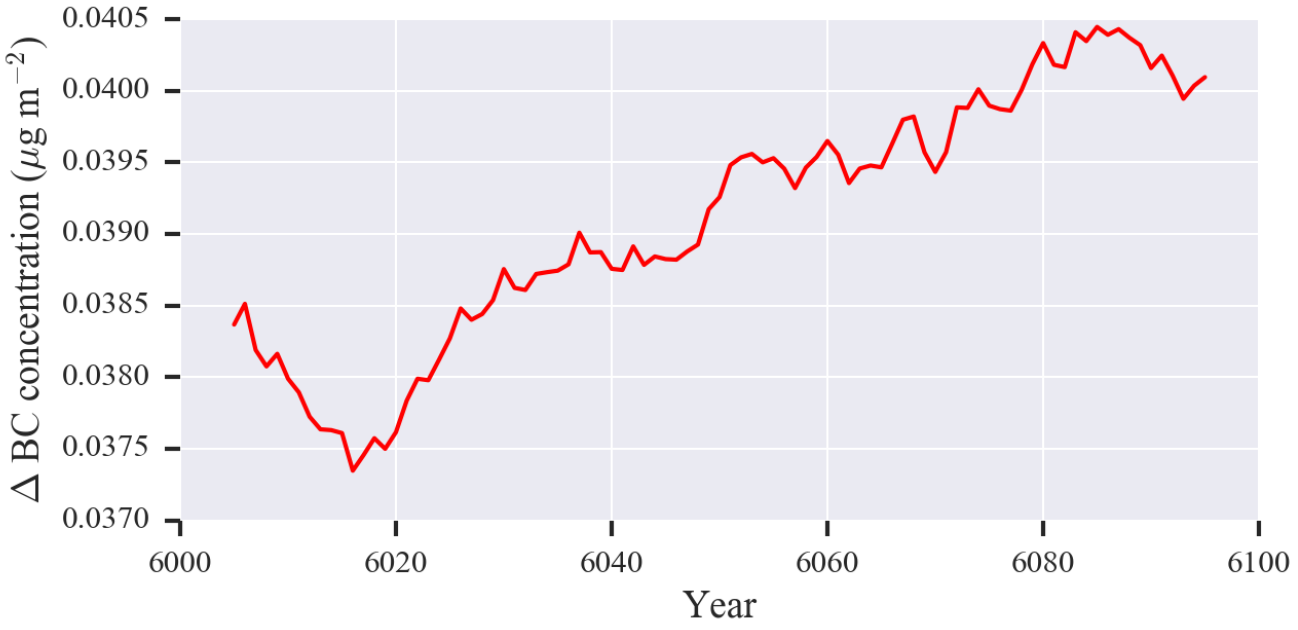
Transient

Non-transient






0.0405
0.0400
0.0395
0.0390
0.0385
0.0380
0.0375
0.0370
Δ BC concentration (μg m⁻²)
2000
2020
2040
2060
2080
2100
Year


0.0405
0.0400
0.0395
0.0390
0.0385
0.0380
0.0375
0.0370
Δ BC concentration (μg m⁻²)
6000
6020
6040
6060
6080
6100
Year