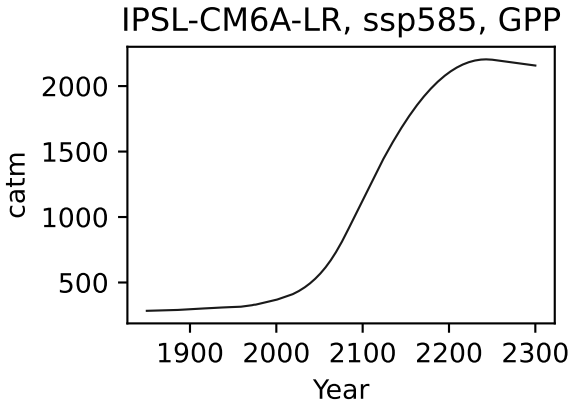
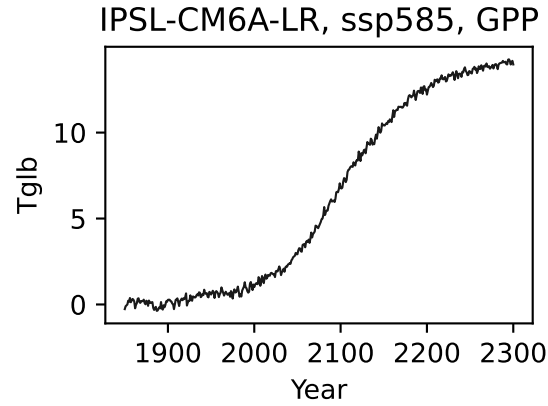
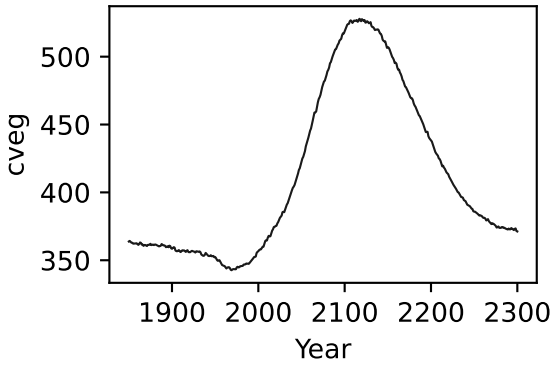
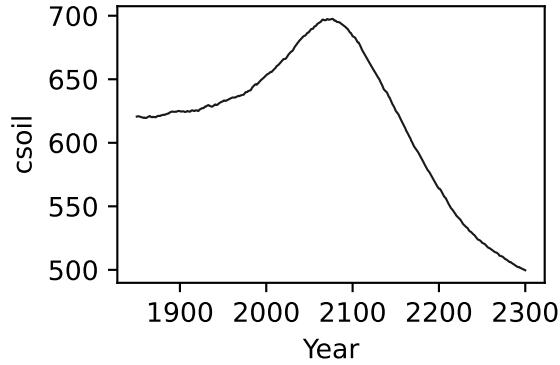
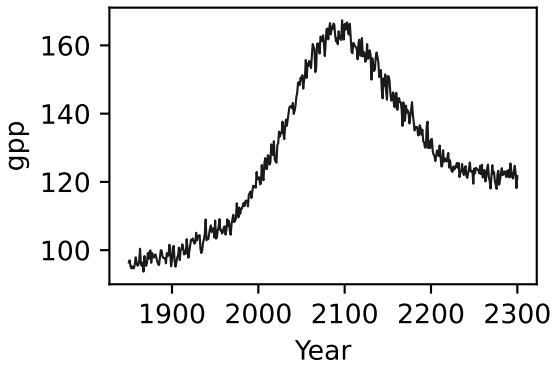
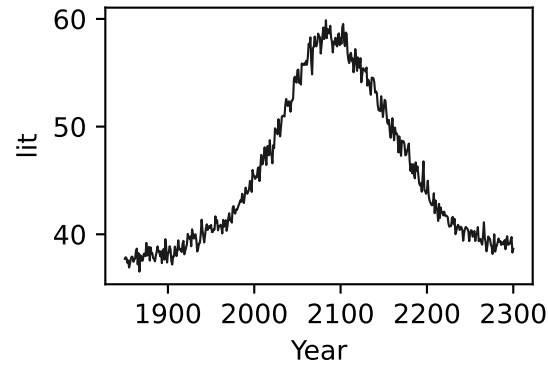

IPSL-CM6A-LR, ssp585, GPP
catm
2000
1500
1000
500
1900
2000
2100
2200
2300
Year

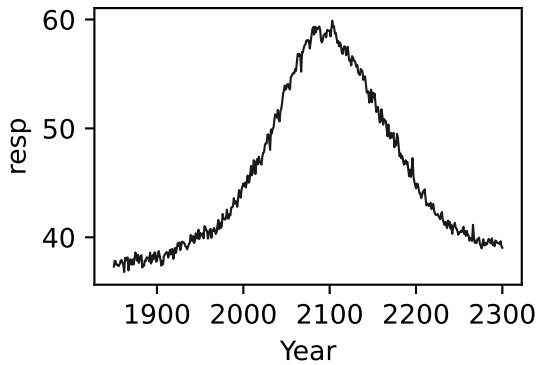

IPSL-CM6A-LR, ssp585, GPP
Tglb
10
5
0
1900
2000
2100
2200
2300
Year

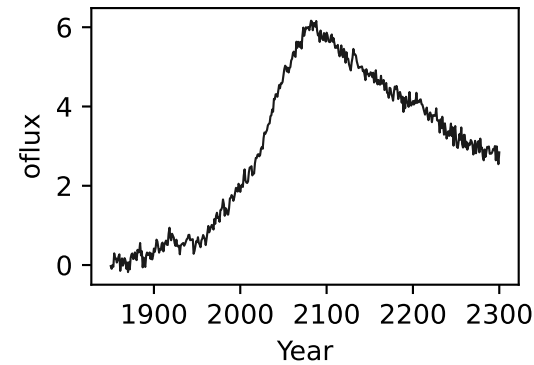

cveg
500
450
400
350
1900
2000
2100
2200
2300
Year

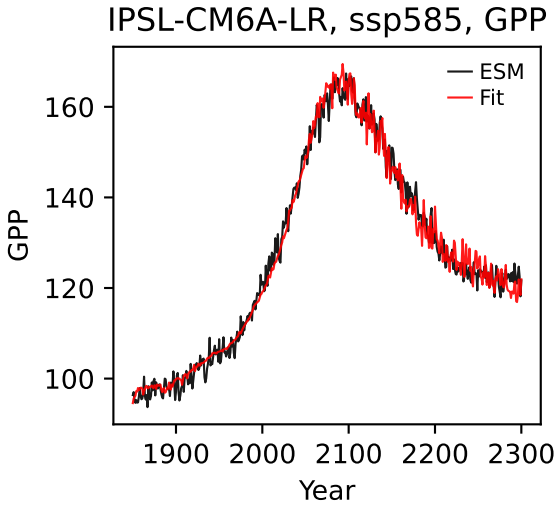

csoil
700
650
600
550
500
1900
2000
2100
2200
2300
Year

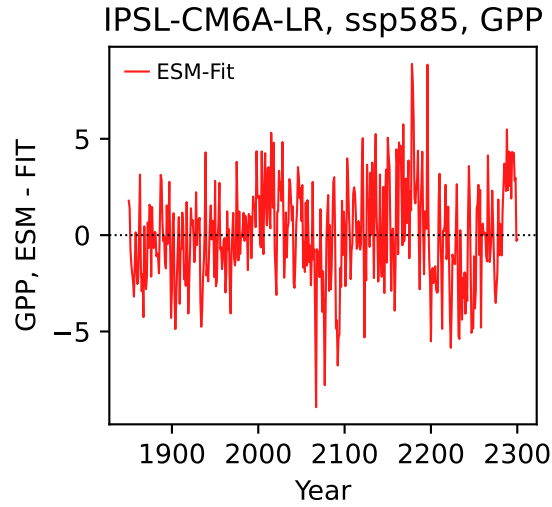

gpp
160
140
120
100
1900
2000
2100
2200
2300
Year

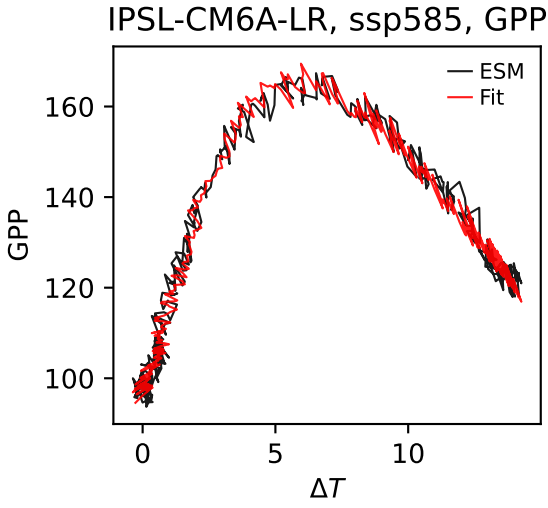

lit
60
50
40
1900
2000
2100
2200
2300
Year

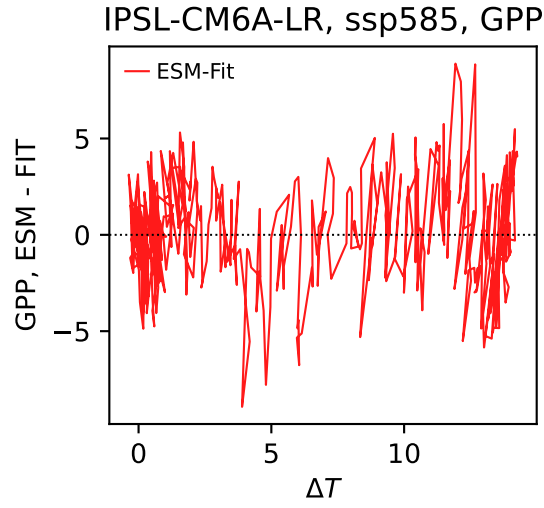

resp
60
50
40
1900
2000
2100
2200
2300
Year

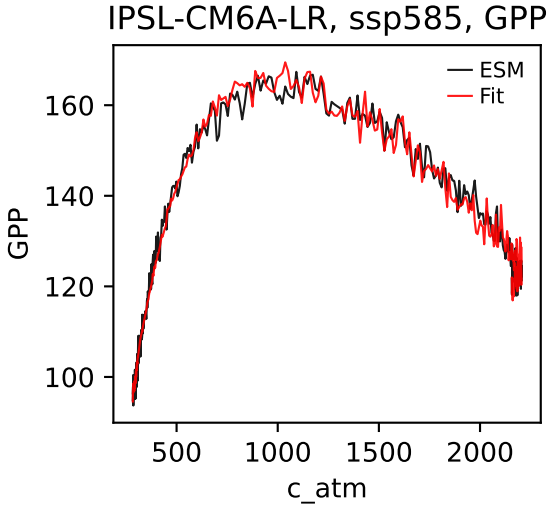

oflux
6
4
2
0
1900
2000
2100
2200
2300
Year

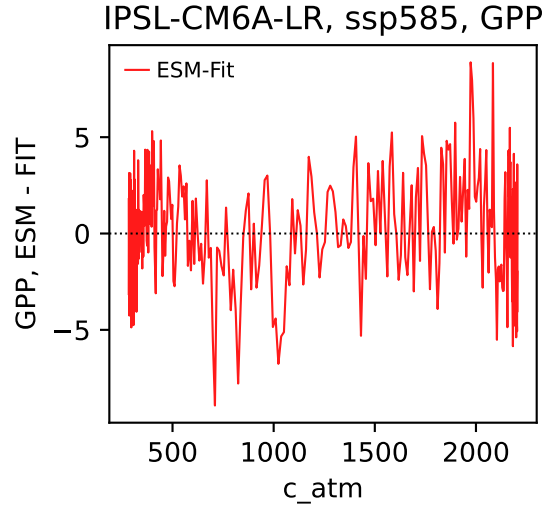

IPSL-CM6A-LR, ssp585, GPP
ESM
Fit
GPP
160
140
120
100
1900
2000
2100
2200
2300
Year

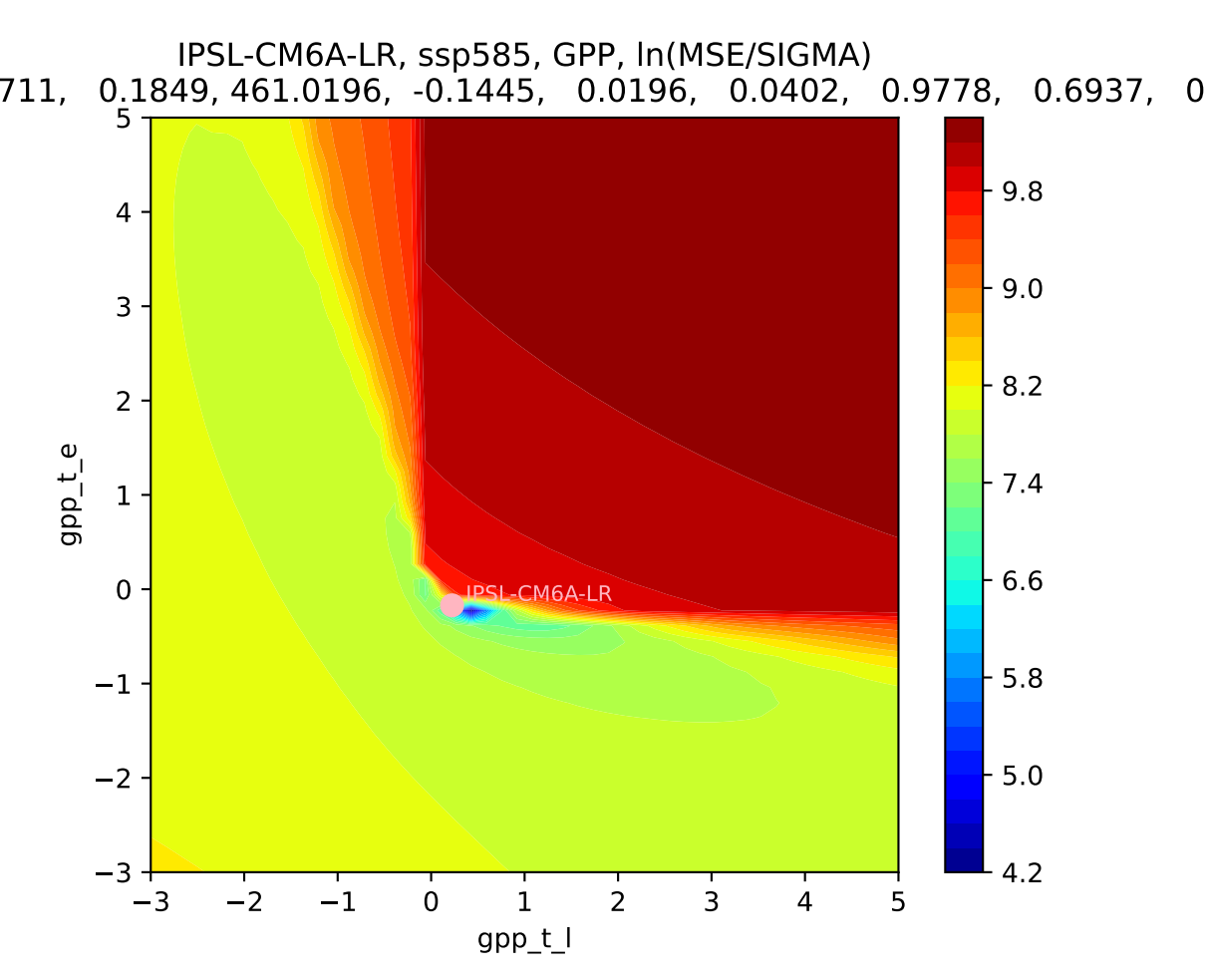

IPSL-CM6A-LR, ssp585, GPP
ESM-Fit
GPP, ESM - FIT
5
0
−5
1900
2000
2100
2200
2300
Year

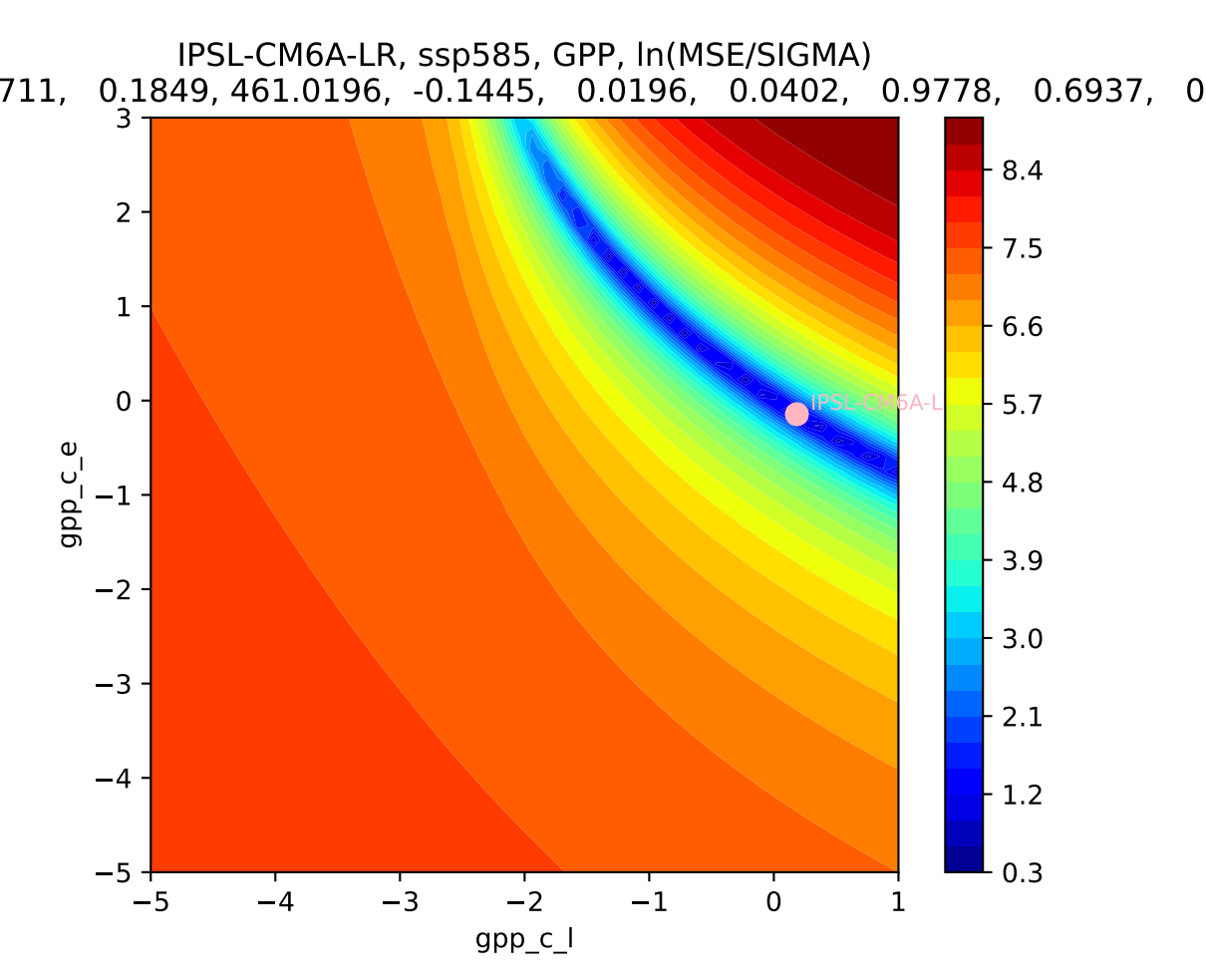

IPSL-CM6A-LR, ssp585, GPP
ESM
Fit
GPP
160
140
120
100
0
5
10
ΔT

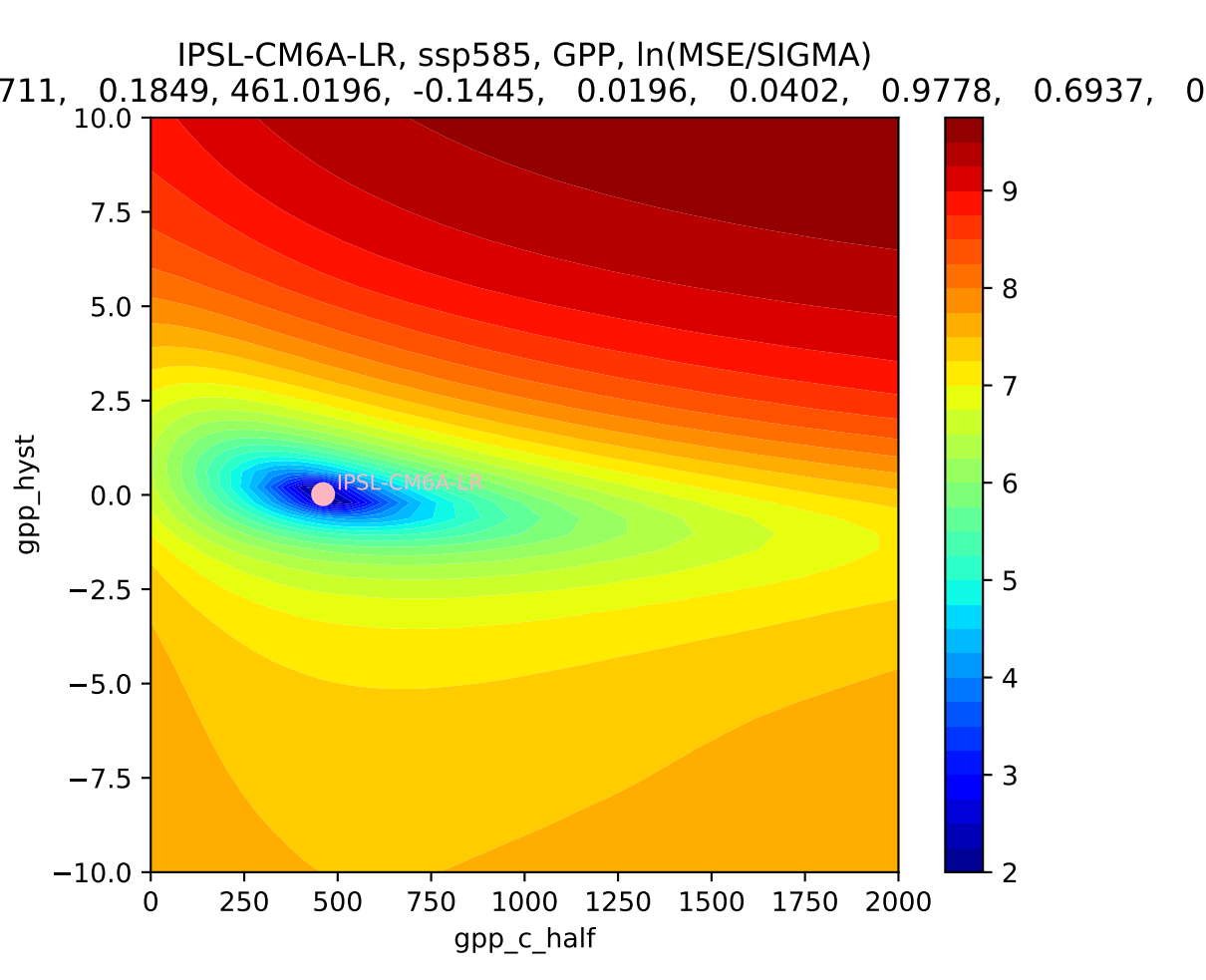

IPSL-CM6A-LR, ssp585, GPP
ESM-Fit
GPP, ESM - FIT
5
0
−5
0
5
10
ΔT

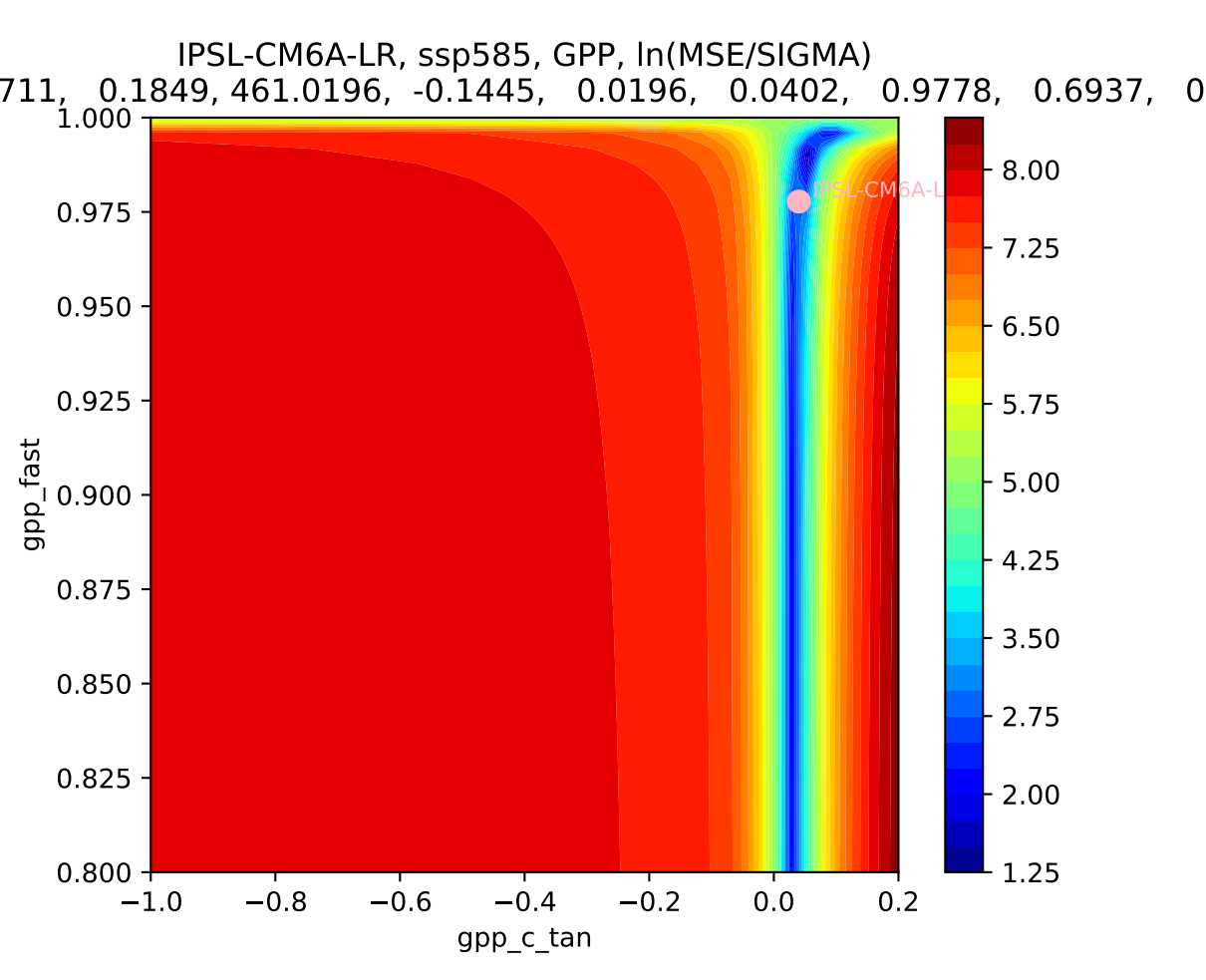

IPSL-CM6A-LR, ssp585, GPP
ESM
Fit
GPP
160
140
120
100
500
1000
1500
2000
c_atm

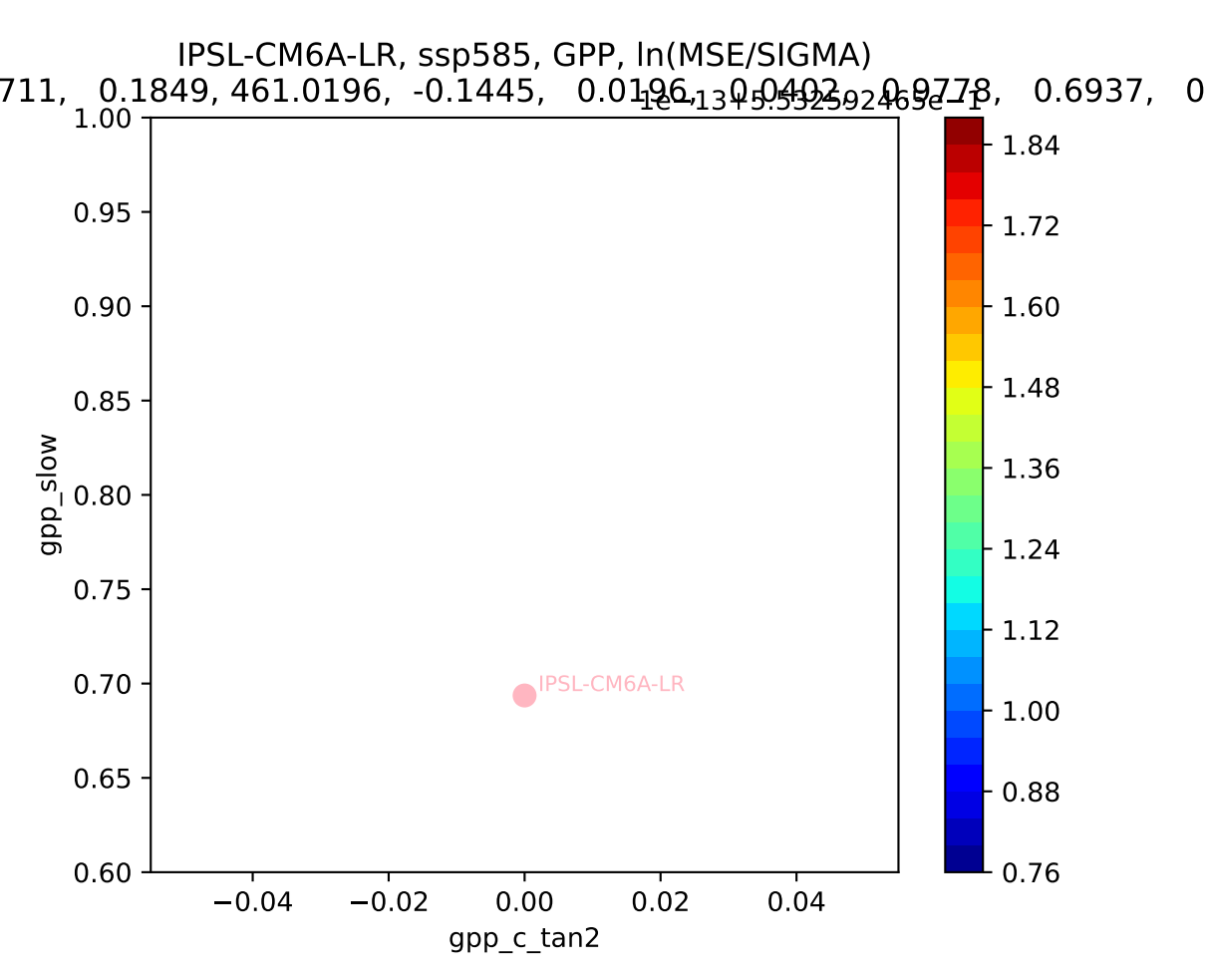

IPSL-CM6A-LR, ssp585, GPP
ESM-Fit
GPP, ESM - FIT
5
0
−5
500
1000
1500
2000
c_atm

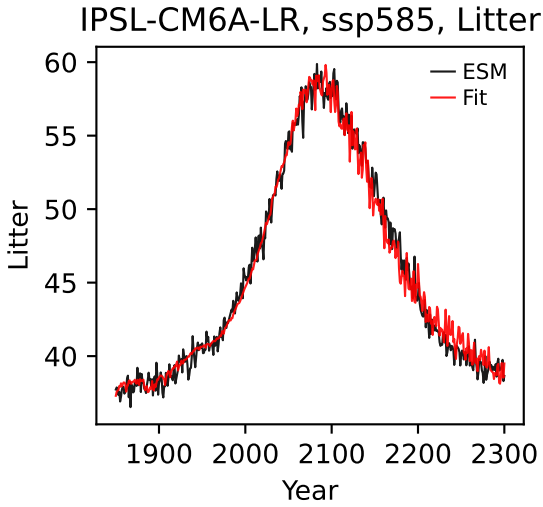

IPSL-CM6A-LR, ssp585, GPP, ln(MSE/SIGMA)
711, 0.1849, 461.0196, -0.1445, 0.0196, 0.0402, 0.9778, 0.6937, 0
IPSL-CM6A-LR
gpp_t_e
gpp_t_l
5
4
3
2
1
0
−1
−2
−3
−3
−2
−1
0
1
2
3
4
5
9.8
9.0
8.2
7.4
6.6
5.8
5.0
4.2

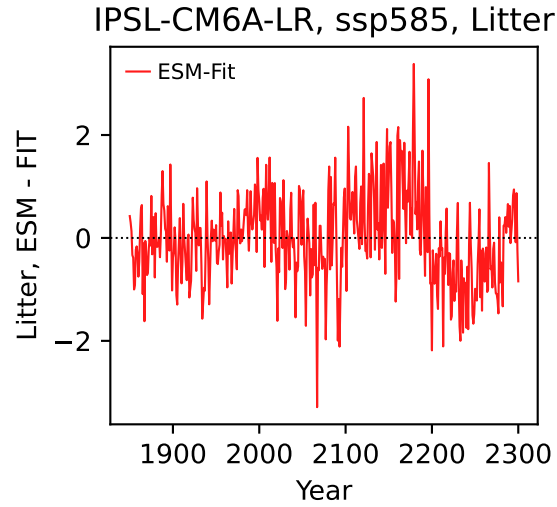

IPSL-CM6A-LR, ssp585, GPP, ln(MSE/SIGMA)
711, 0.1849, 461.0196, -0.1445, 0.0196, 0.0402, 0.9778, 0.6937, 0
IPSL-CM6A-L
gpp_c_e
gpp_c_l
3
2
1
0
−1
−2
−3
−4
−5
−5
−4
−3
−2
−1
0
1
8.4
7.5
6.6
5.7
4.8
3.9
3.0
2.1
1.2
0.3

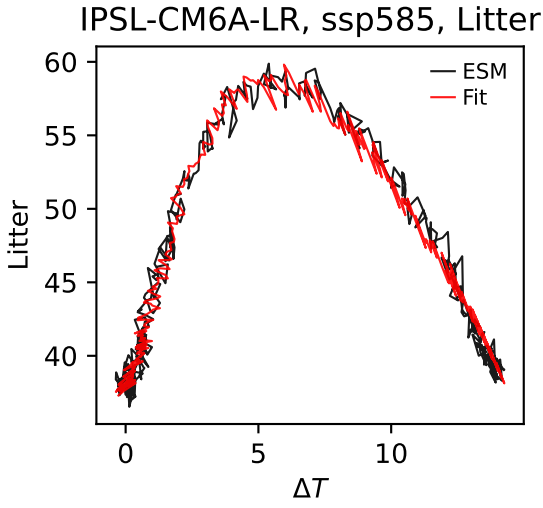

IPSL-CM6A-LR, ssp585, GPP, ln(MSE/SIGMA)
711, 0.1849, 461.0196, -0.1445, 0.0196, 0.0402, 0.9778, 0.6937, 0
IPSL-CM6A-LR
gpp_hyst
gpp_c_half
10.0
7.5
5.0
2.5
0.0
−2.5
−5.0
−7.5
−10.0
0
250
500
750
1000
1250
1500
1750
2000
9
8
7
6
5
4
3
2

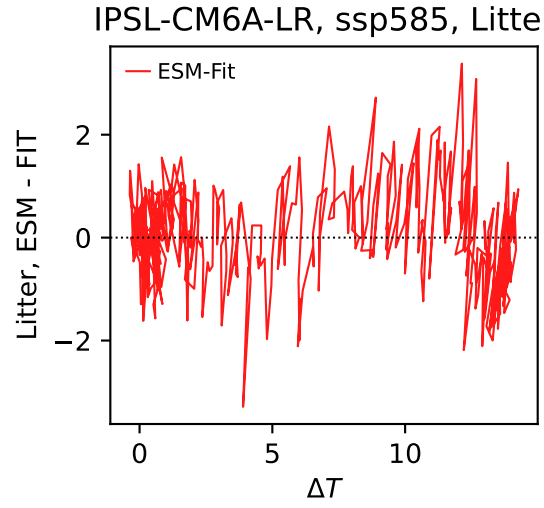

IPSL-CM6A-LR, ssp585, GPP, ln(MSE/SIGMA)
711, 0.1849, 461.0196, -0.1445, 0.0196, 0.0402, 0.9778, 0.6937, 0
IPSL-CM6A-L
1.000
0.975
0.950
0.925
0.900
0.875
0.850
0.825
0.800
gpp_fast
−1.0
−0.8
−0.6
−0.4
−0.2
0.0
0.2
gpp_c_tan
8.00
7.25
6.50
5.75
5.00
4.25
3.50
2.75
2.00
1.25

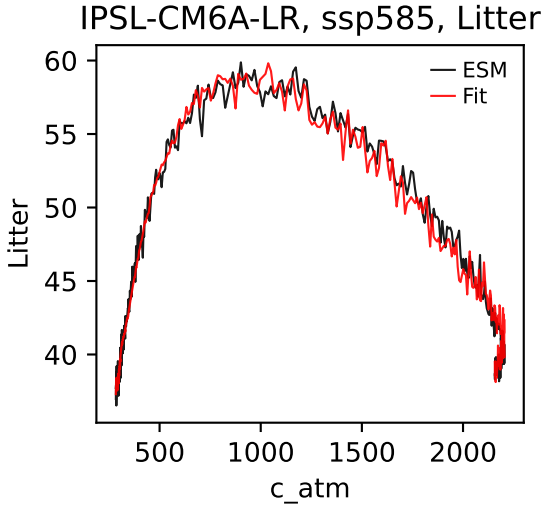

IPSL-CM6A-LR, ssp585, GPP, ln(MSE/SIGMA)
711, 0.1849, 461.0196, -0.1445, 0.0196, 0.0402, 0.9778, 0.6937, 0
1e−13+5.532592465e−1
1.00
0.95
0.90
0.85
0.80
0.75
0.70
0.65
0.60
gpp_slow
IPSL-CM6A-LR
−0.04
−0.02
0.00
0.02
0.04
gpp_c_tan2
1.84
1.72
1.60
1.48
1.36
1.24
1.12
1.00
0.88
0.76

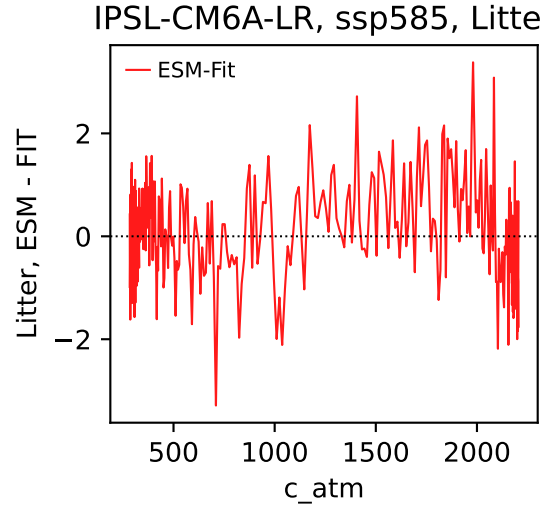

IPSL-CM6A-LR, ssp585, Litter
ESM
Fit
Litter
Year

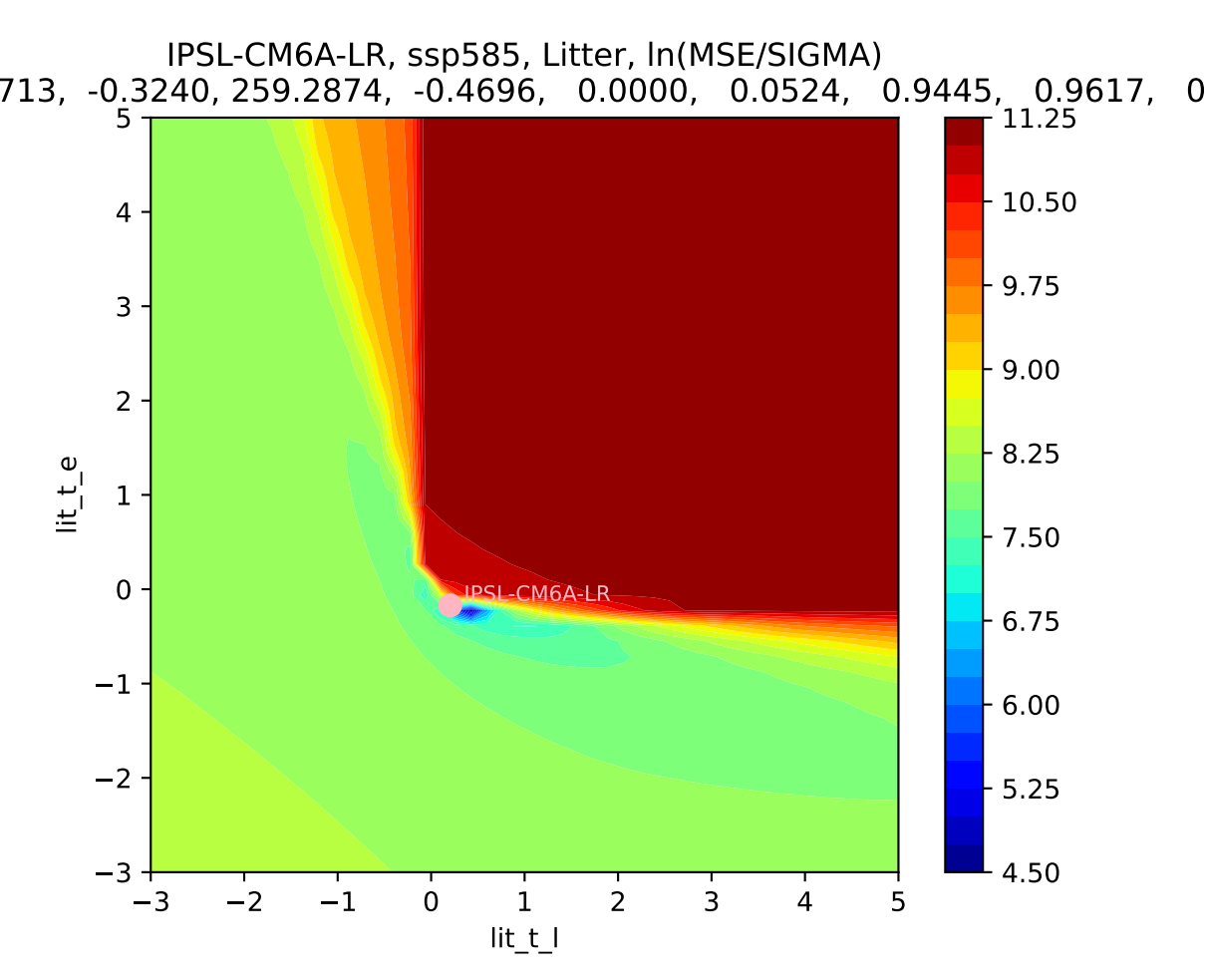

IPSL-CM6A-LR, ssp585, Litter
ESM-Fit
Litter, ESM - FIT
Year

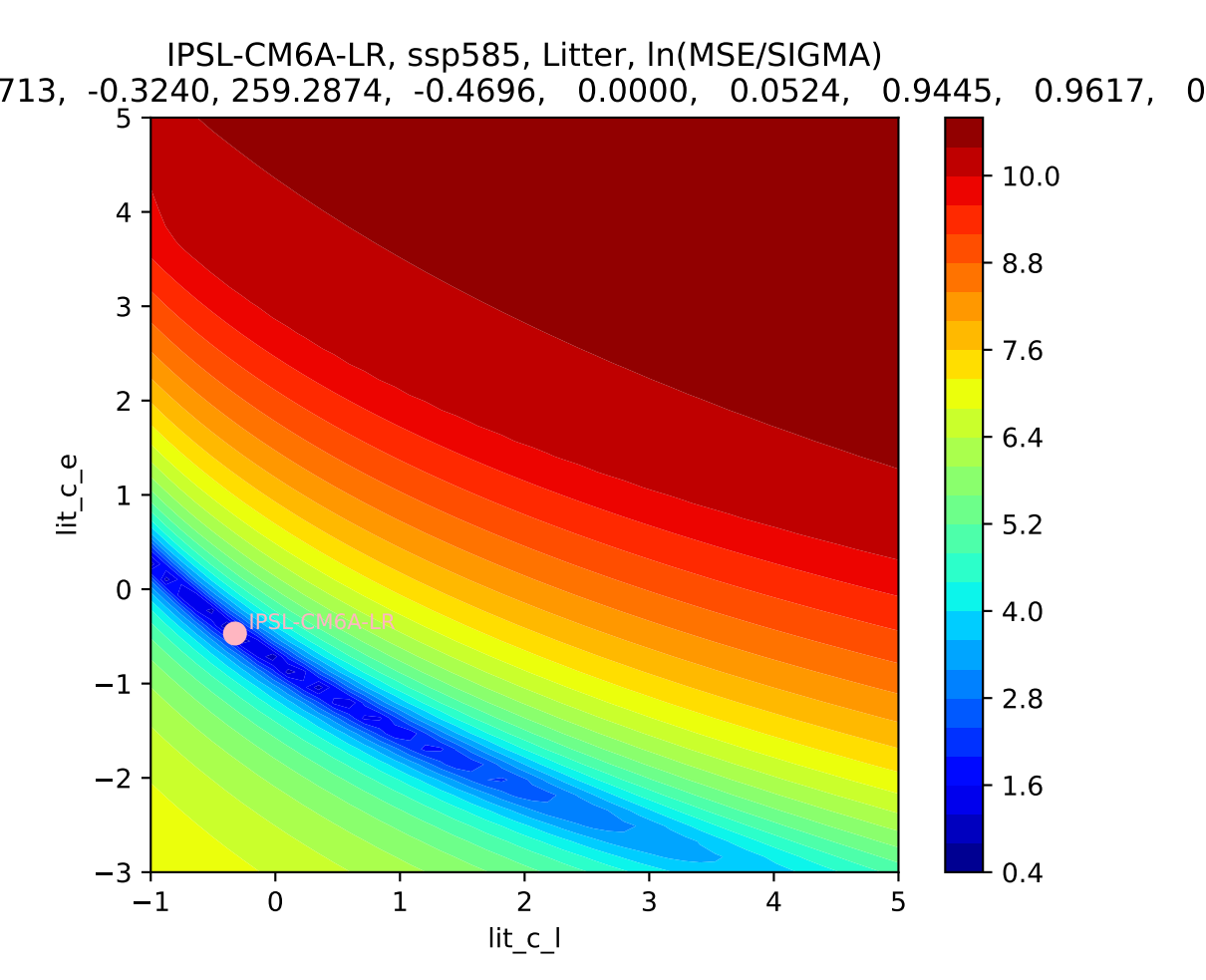

IPSL-CM6A-LR, ssp585, Litter
ESM
Fit
Litter
ΔT

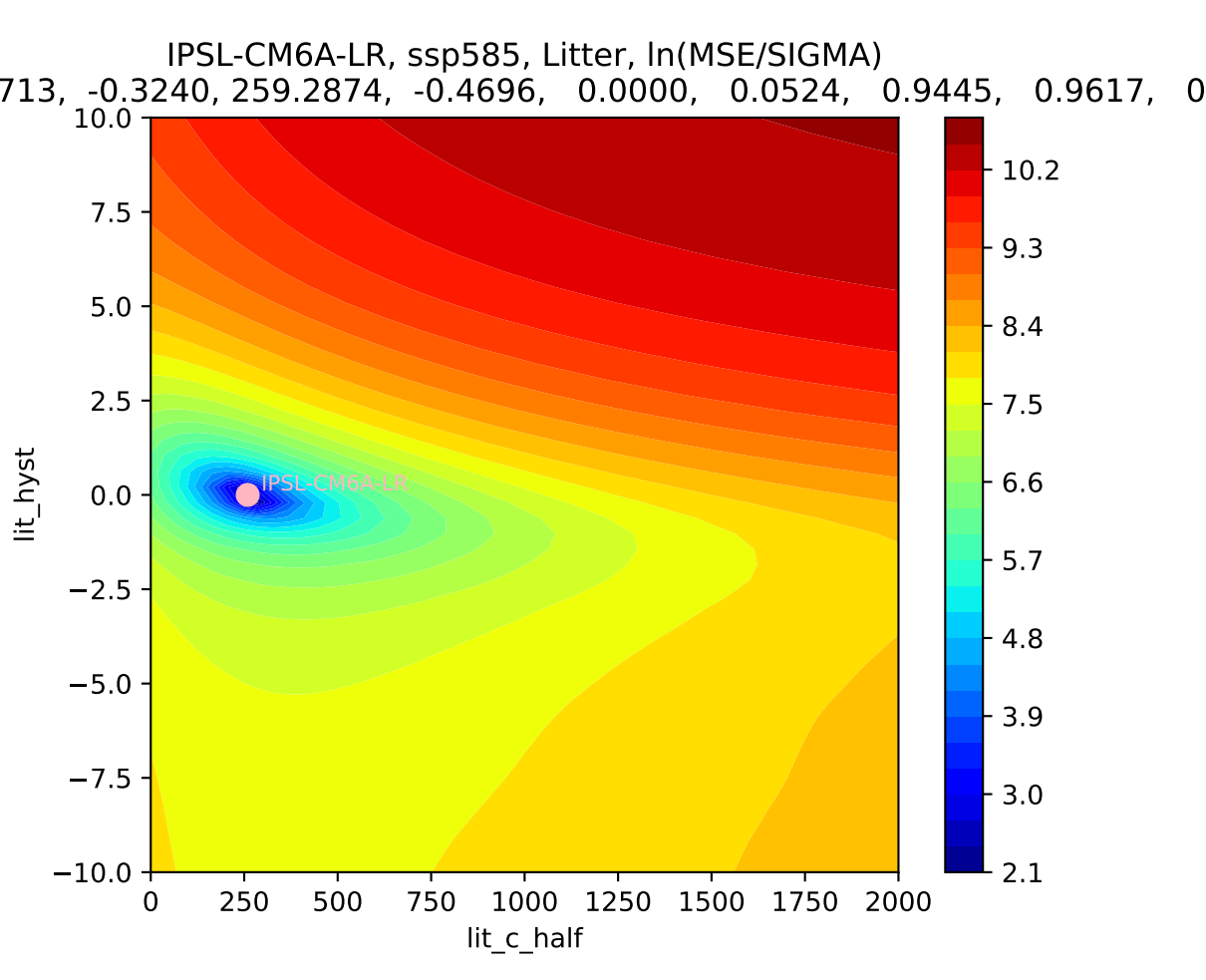

IPSL-CM6A-LR, ssp585, Litter
ESM-Fit
Litter, ESM - FIT
ΔT

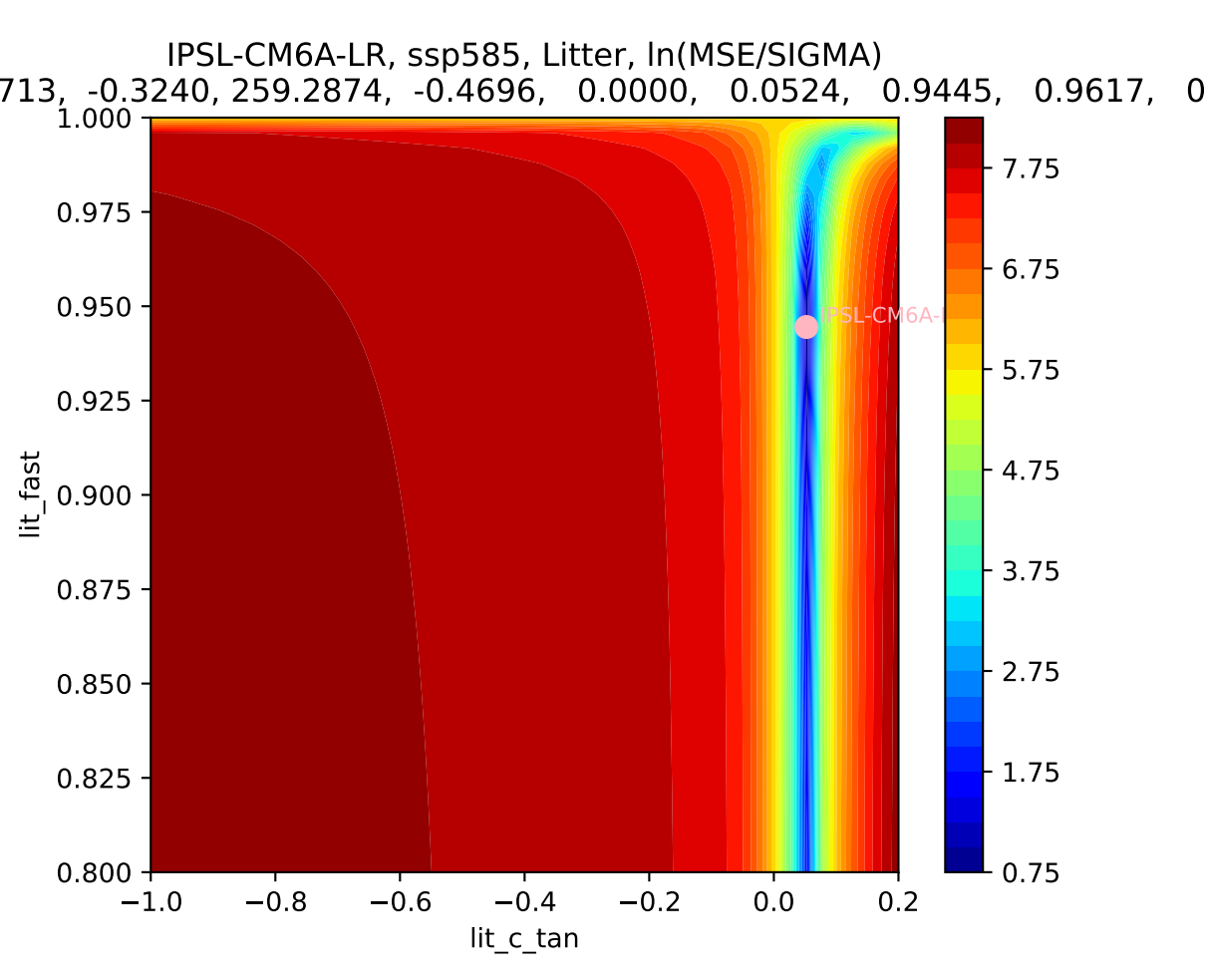

IPSL-CM6A-LR, ssp585, Litter
ESM
Fit
Litter
c_atm

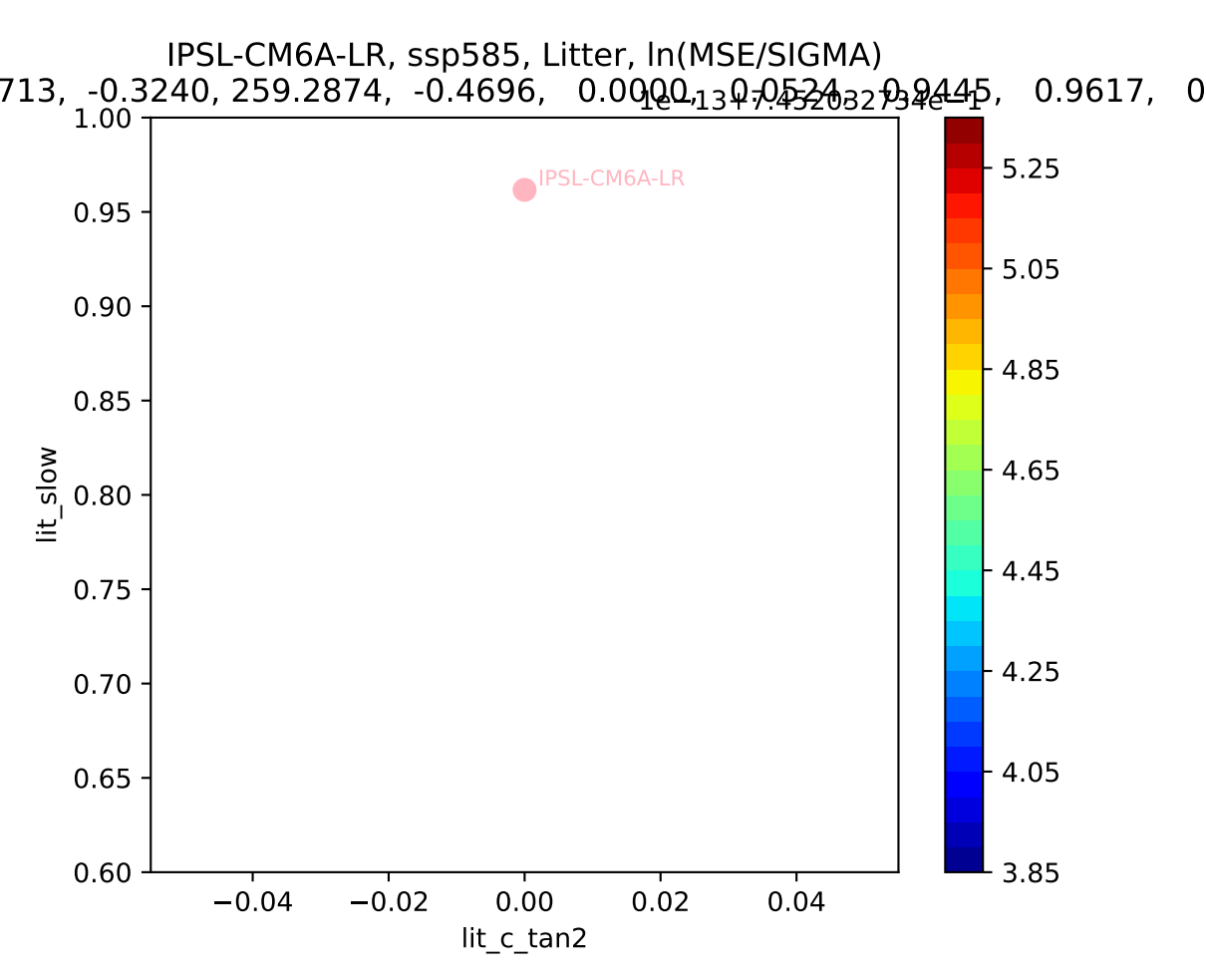

IPSL-CM6A-LR, ssp585, Litter
ESM-Fit
Litter, ESM - FIT
c_atm

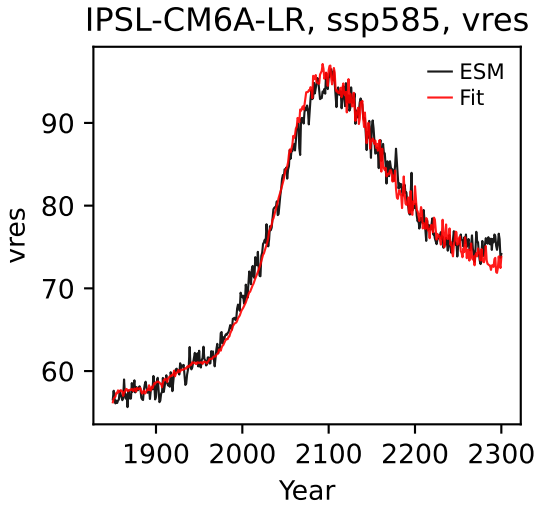

IPSL-CM6A-LR, ssp585, Litter, ln(MSE/SIGMA)
713, -0.3240, 259.2874, -0.4696, 0.0000, 0.0524, 0.9445, 0.9617, 0
IPSL-CM6A-LR
lit_t_e
lit_t_l
11.25
10.50
9.75
9.00
8.25
7.50
6.75
6.00
5.25
4.50

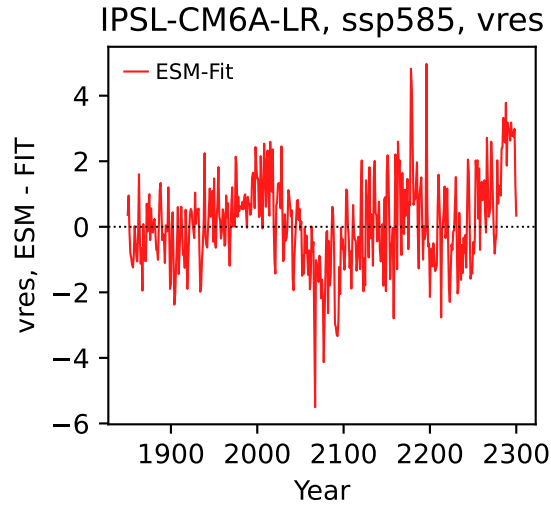

IPSL-CM6A-LR, ssp585, Litter, ln(MSE/SIGMA)
713, -0.3240, 259.2874, -0.4696, 0.0000, 0.0524, 0.9445, 0.9617, 0
IPSL-CM6A-LR
lit_c_e
lit_c_l
5
4
3
2
1
0
−1
−2
−3
−1
0
1
2
3
4
5
10.0
8.8
7.6
6.4
5.2
4.0
2.8
1.6
0.4

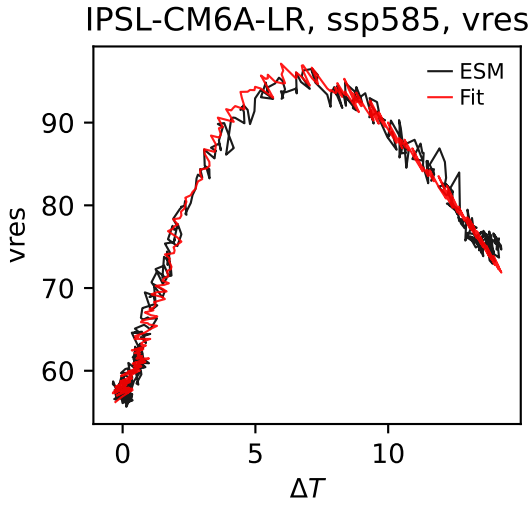

IPSL-CM6A-LR, ssp585, Litter, ln(MSE/SIGMA)
713, -0.3240, 259.2874, -0.4696, 0.0000, 0.0524, 0.9445, 0.9617, 0
IPSL-CM6A-LR
lit_hyst
lit_c_half
10.0
7.5
5.0
2.5
0.0
−2.5
−5.0
−7.5
−10.0
0
250
500
750
1000
1250
1500
1750
2000
10.2
9.3
8.4
7.5
6.6
5.7
4.8
3.9
3.0
2.1

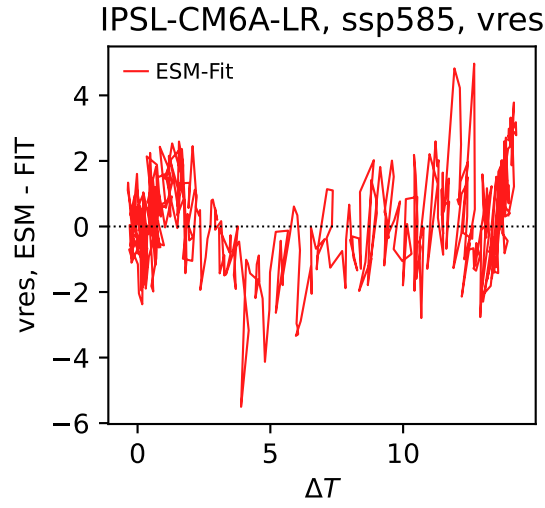

IPSL-CM6A-LR, ssp585, Litter, ln(MSE/SIGMA)
713, -0.3240, 259.2874, -0.4696, 0.0000, 0.0524, 0.9445, 0.9617, 0
IPSL-CM6A-
lit_fast
lit_c_tan
1.000
0.975
0.950
0.925
0.900
0.875
0.850
0.825
0.800
−1.0
−0.8
−0.6
−0.4
−0.2
0.0
0.2
7.75
6.75
5.75
4.75
3.75
2.75
1.75
0.75

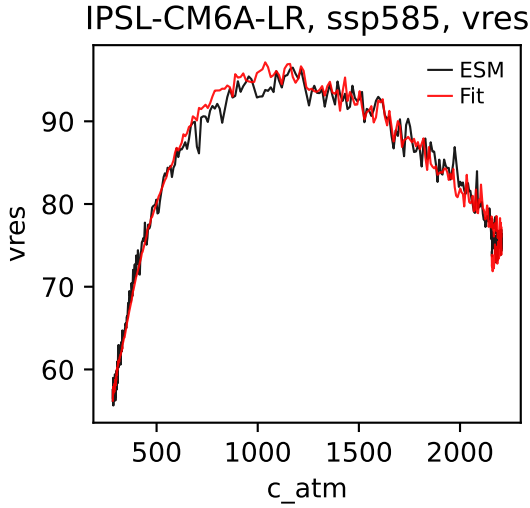

IPSL-CM6A-LR, ssp585, Litter, ln(MSE/SIGMA)
713, -0.3240, 259.2874, -0.4696, 0.0000, 0.0524, 0.9445, 0.9617, 0
1e−13+7.4520327734e−1
IPSL-CM6A-LR
1.00
0.95
0.90
0.85
0.80
0.75
0.70
0.65
0.60
lit_slow
−0.04
−0.02
0.00
0.02
0.04
lit_c_tan2
5.25
5.05
4.85
4.65
4.45
4.25
4.05
3.85

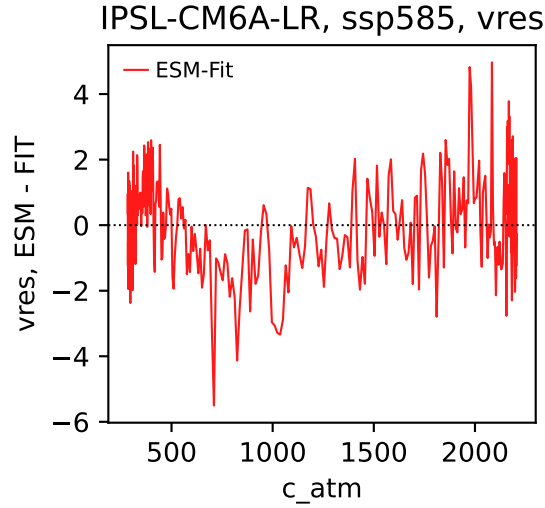

IPSL-CM6A-LR, ssp585, vres
ESM
Fit
vres
Year

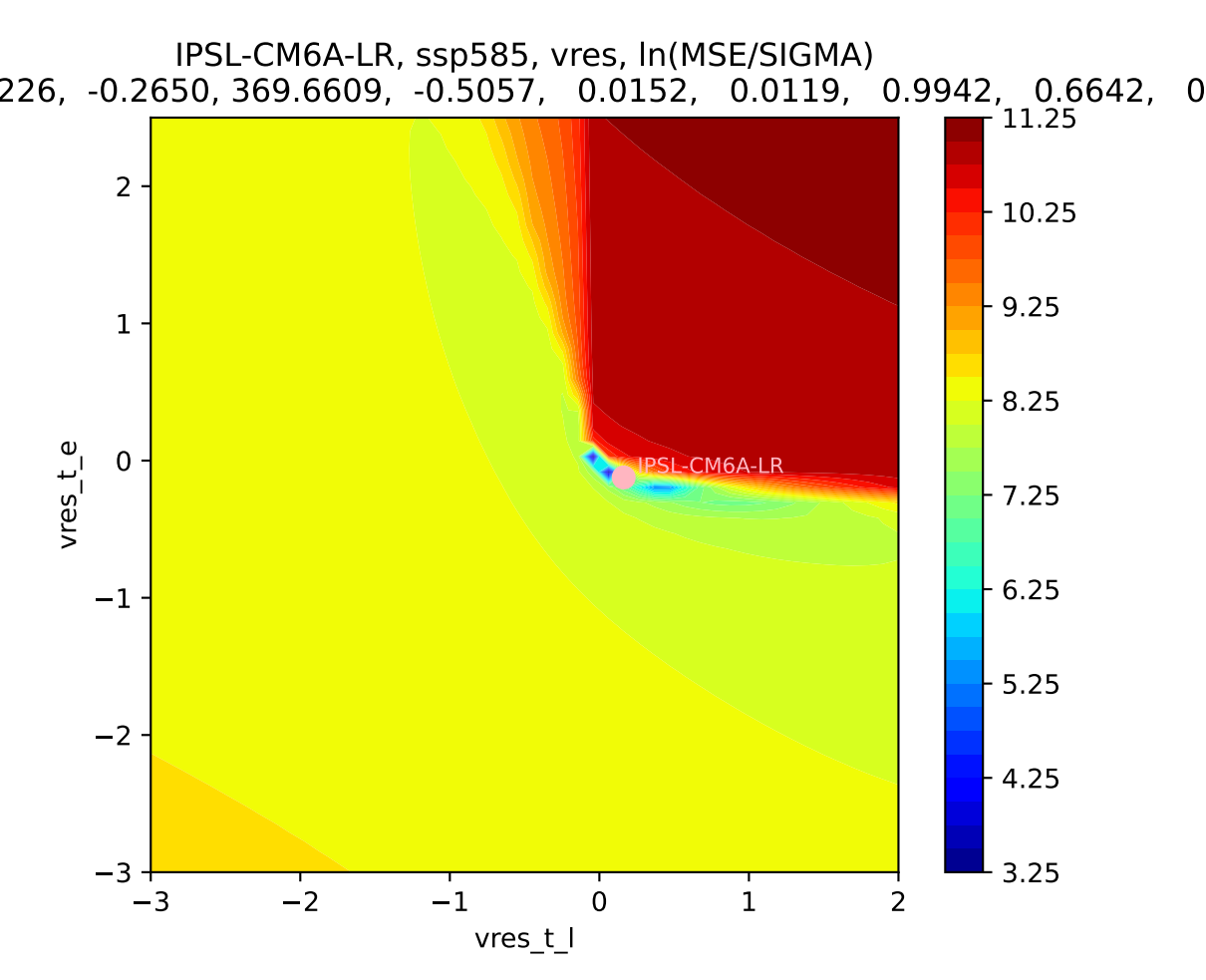

IPSL-CM6A-LR, ssp585, vres
ESM-Fit
vres, ESM - FIT
Year

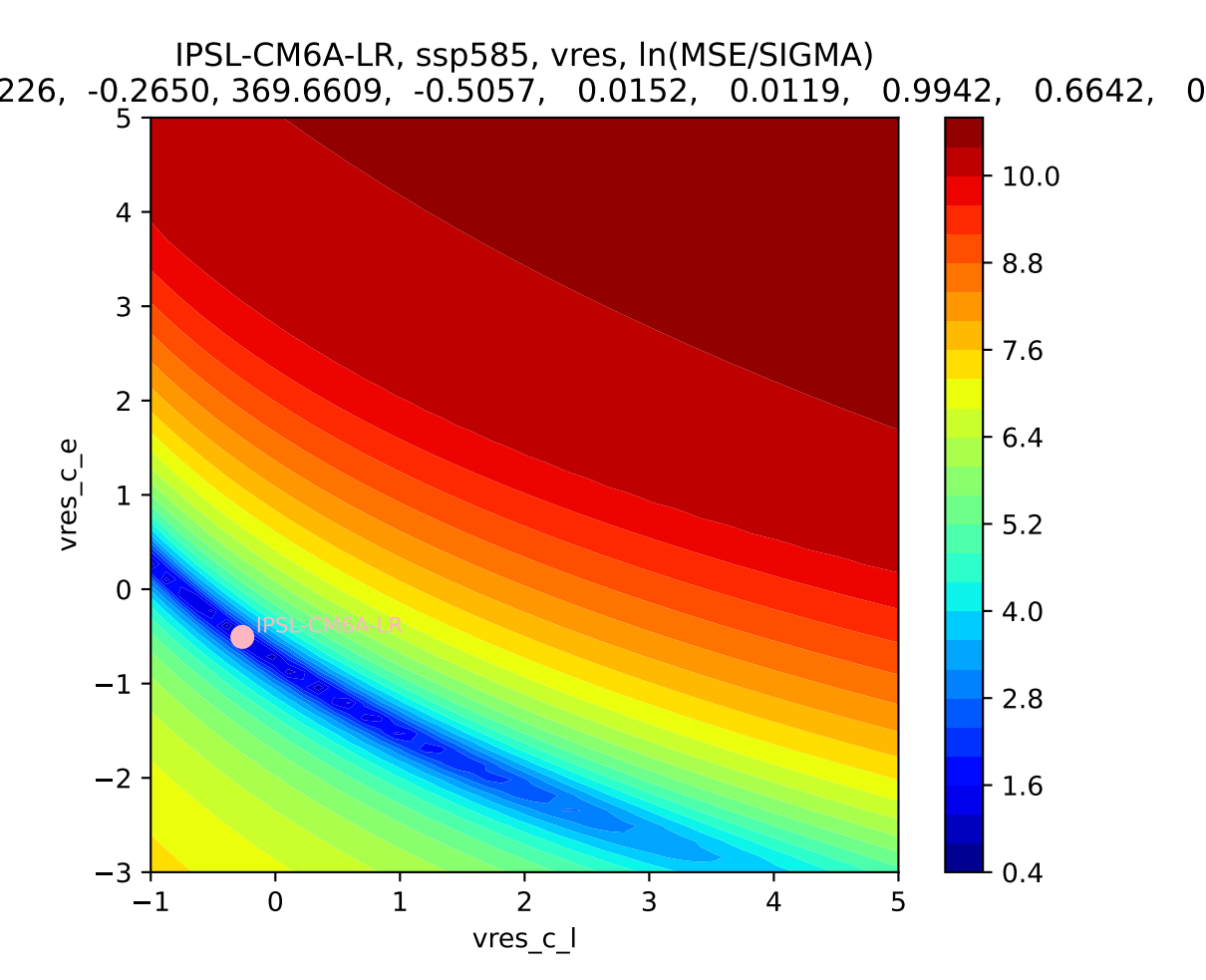

IPSL-CM6A-LR, ssp585, vres
ESM
Fit
vres
ΔT

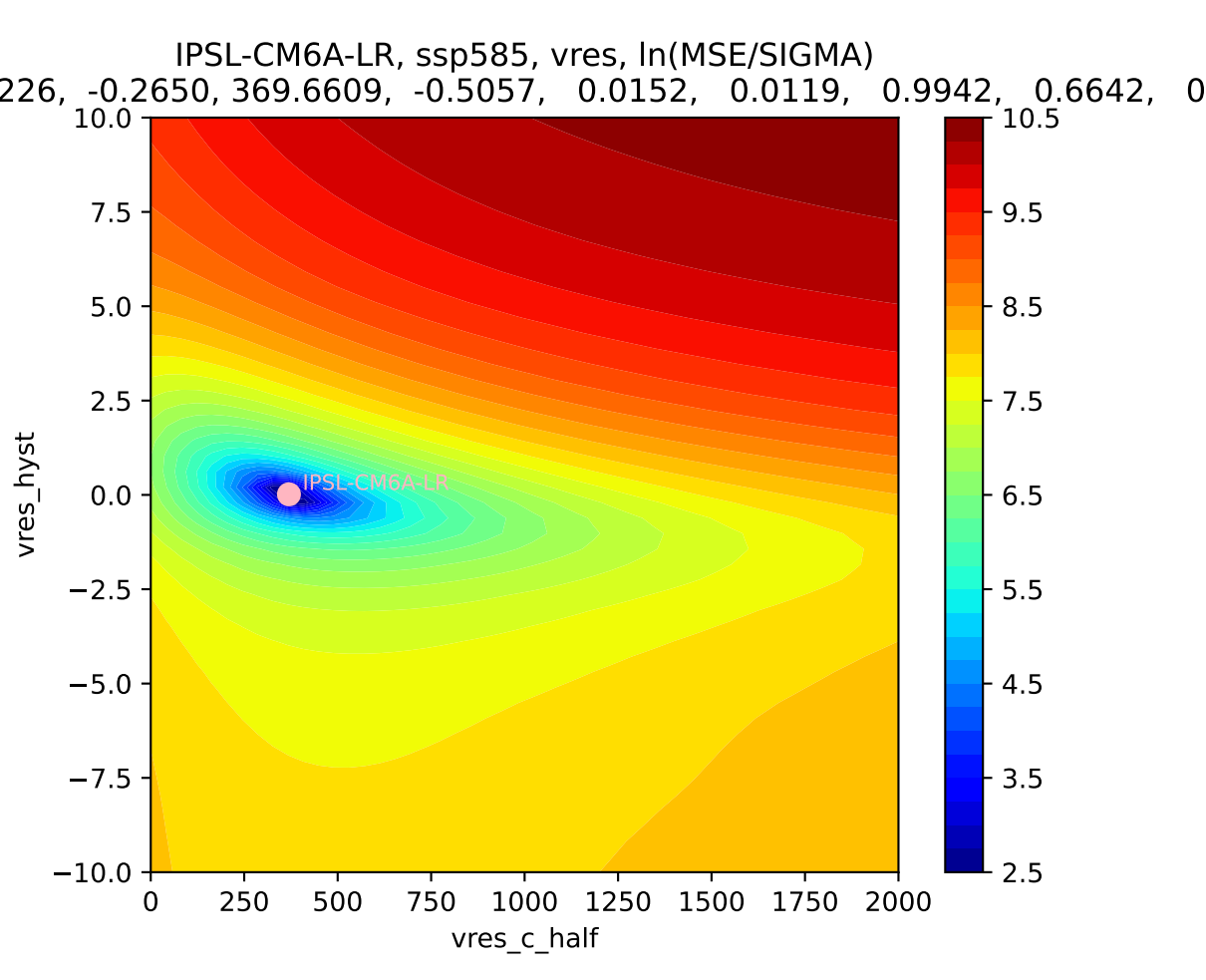

IPSL-CM6A-LR, ssp585, vres
ESM-Fit
vres, ESM - FIT
ΔT


IPSL-CM6A-LR, ssp585, vres
ESM
Fit
vres
c_atm


IPSL-CM6A-LR, ssp585, vres
ESM-Fit
vres, ESM - FIT
c_atm


IPSL-CM6A-LR, ssp585, vres, ln(MSE/SIGMA)
226, -0.2650, 369.6609, -0.5057, 0.0152, 0.0119, 0.9942, 0.6642, 0
IPSL-CM6A-LR
vres_t_e
vres_t_l
11.25
10.25
9.25
8.25
7.25
6.25
5.25
4.25
3.25


IPSL-CM6A-LR, ssp585, vres, ln(MSE/SIGMA)
226, -0.2650, 369.6609, -0.5057, 0.0152, 0.0119, 0.9942, 0.6642, 0
IPSL-CM6A-LR
vres_c_e
vres_c_l
5
4
3
2
1
0
−1
−2
−3
−1
0
1
2
3
4
5
10.0
8.8
7.6
6.4
5.2
4.0
2.8
1.6
0.4


IPSL-CM6A-LR, ssp585, vres, ln(MSE/SIGMA)
226, -0.2650, 369.6609, -0.5057, 0.0152, 0.0119, 0.9942, 0.6642, 0
IPSL-CM6A-LR
vres_hyst
vres_c_half
10.0
7.5
5.0
2.5
0.0
−2.5
−5.0
−7.5
−10.0
0
250
500
750
1000
1250
1500
1750
2000
10.5
9.5
8.5
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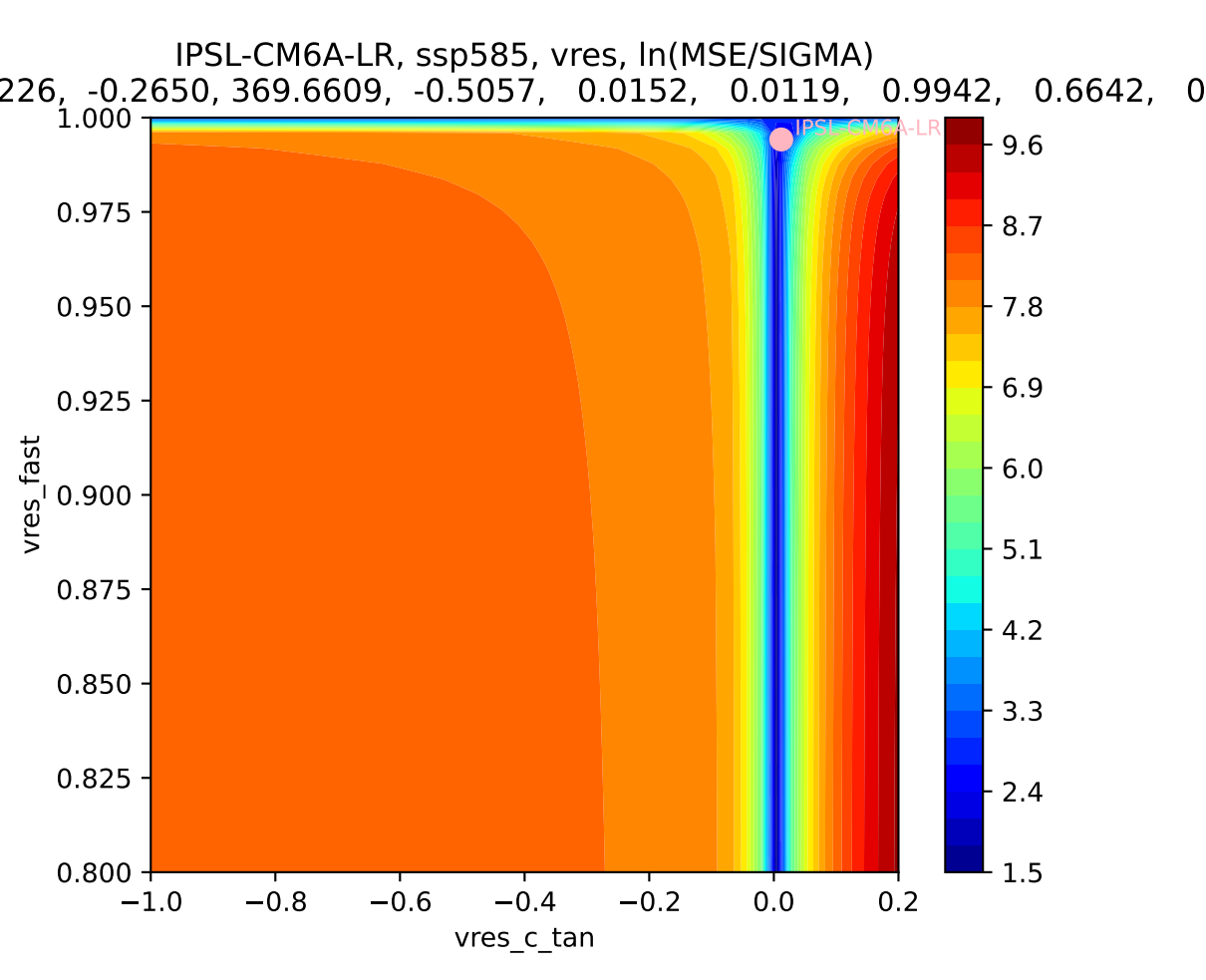
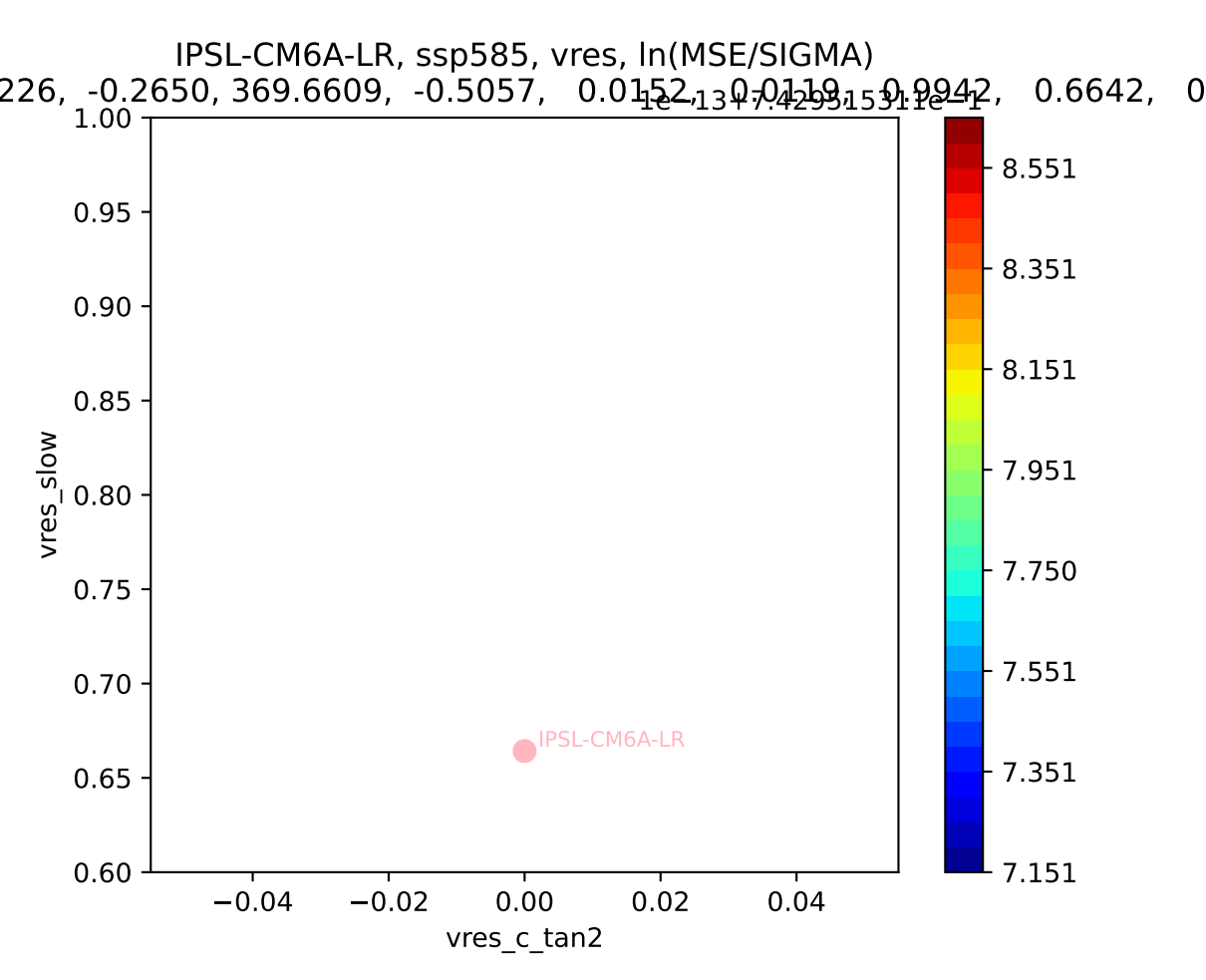
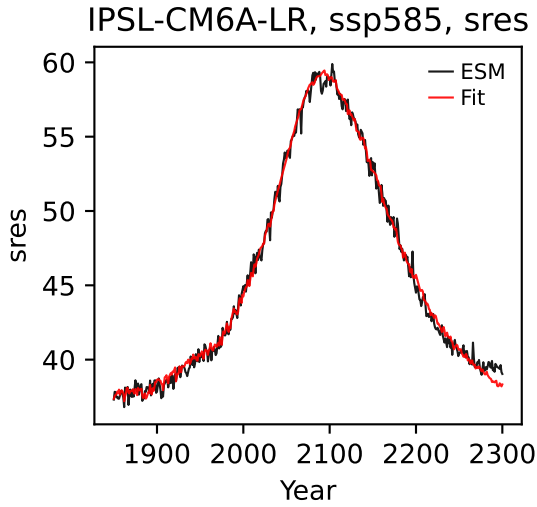
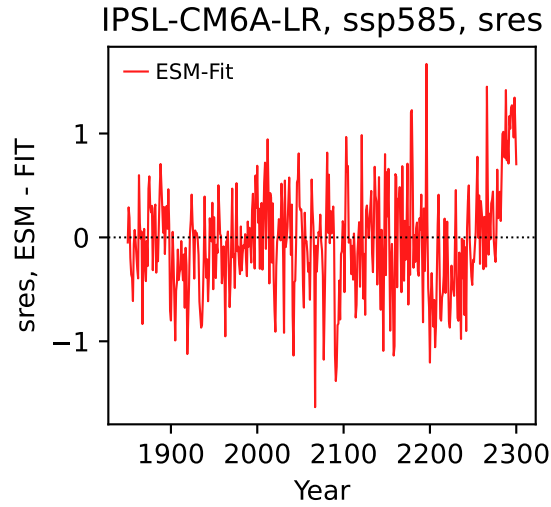
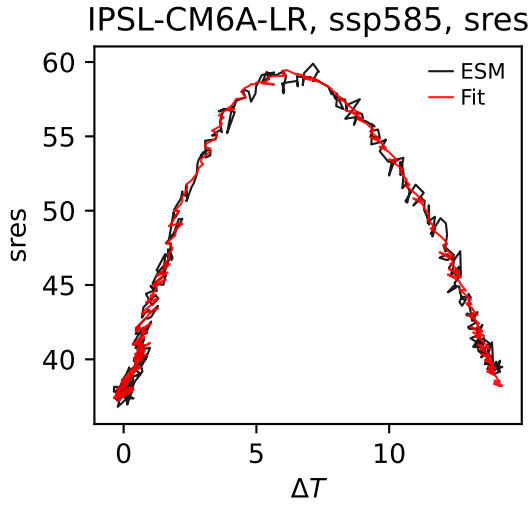
4.5
3.5
2.5

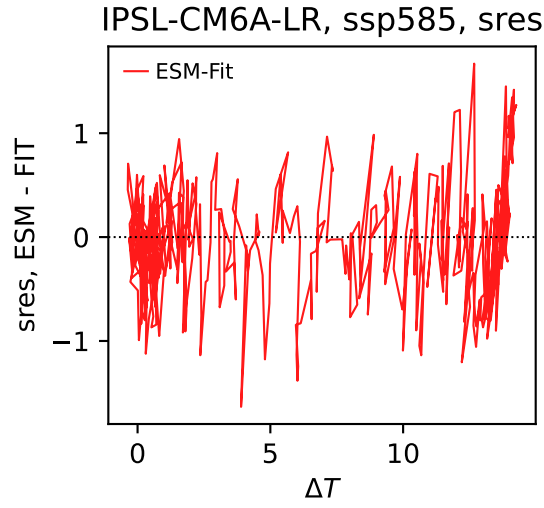

IPSL-CM6A-LR, ssp585, vres, ln(MSE/SIGMA)
226, -0.2650, 369.6609, -0.5057, 0.0152, 0.0119, 0.9942, 0.6642, 0
IPSL-CM6A-LR
vres_fast
vres_c_tan
1.000
0.975
0.950
0.925
0.900
0.875
0.850
0.825
0.800
−1.0
−0.8
−0.6
−0.4
−0.2
0.0
0.2
9.6
8.7
7.8
6.9
6.0
5.1
4.2
3.3
2.4
1.5

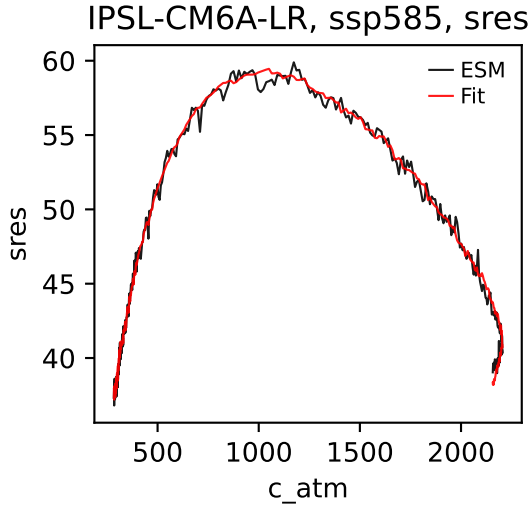

IPSL-CM6A-LR, ssp585, vres, ln(MSE/SIGMA)
226, -0.2650, 369.6609, -0.5057, 0.0152, -0.0119, 0.9942, 0.6642, 0
1e−13+7.4295153111e−1
1.00
0.95
0.90
0.85
0.80
0.75
0.70
0.65
0.60
vres_slow
−0.04
−0.02
0.00
0.02
0.04
vres_c_tan2
IPSL-CM6A-LR
8.551
8.351
8.151
7.951
7.750
7.551
7.351
7.151

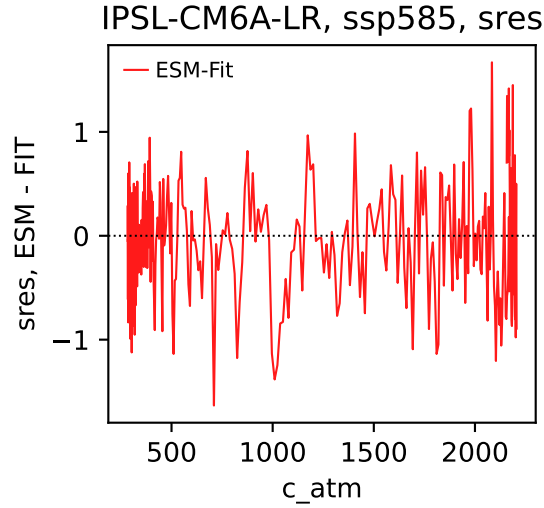

IPSL-CM6A-LR, ssp585, sres
ESM
Fit
sres
Year

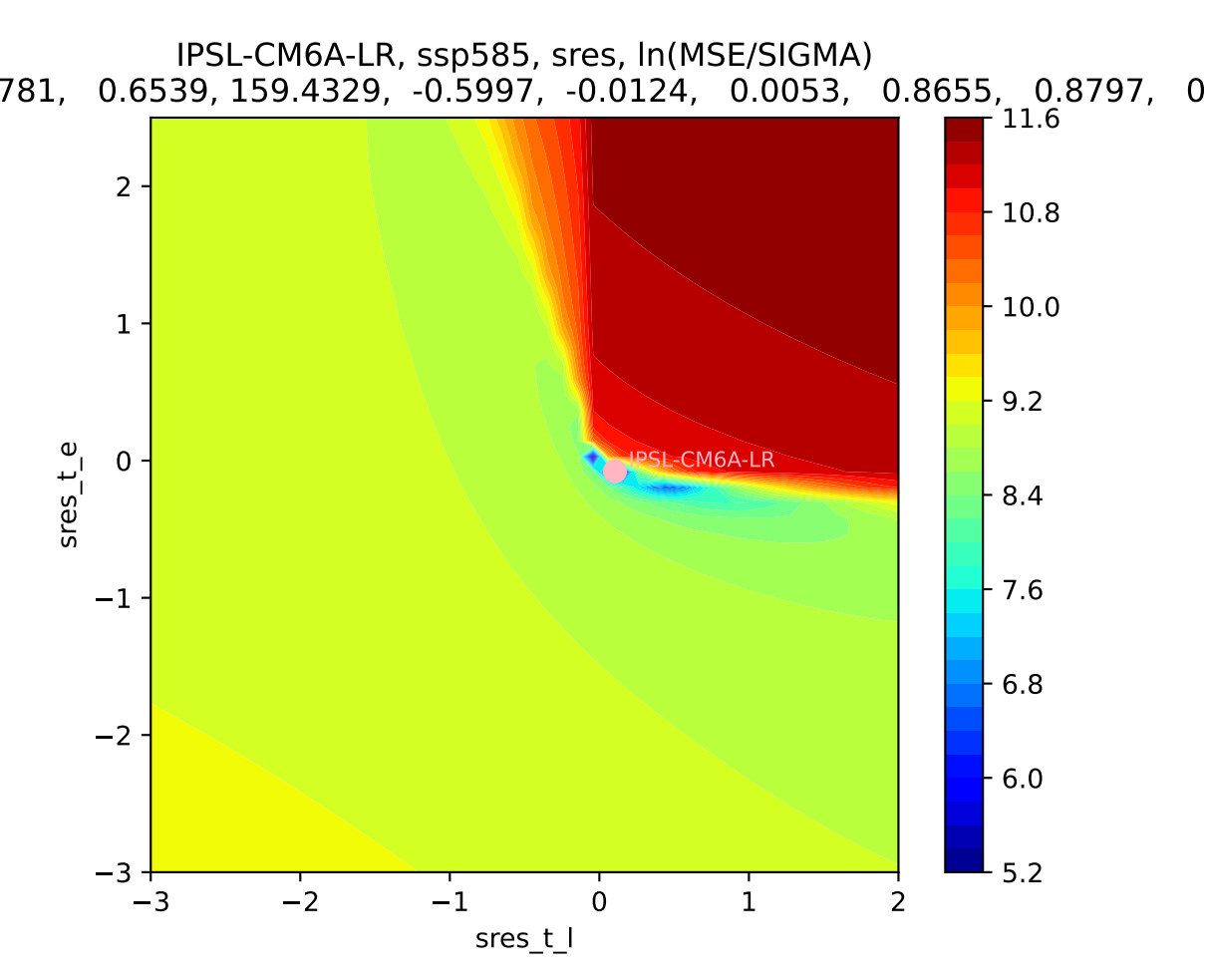

IPSL-CM6A-LR, ssp585, sres
ESM-Fit
sres, ESM - FIT
Year

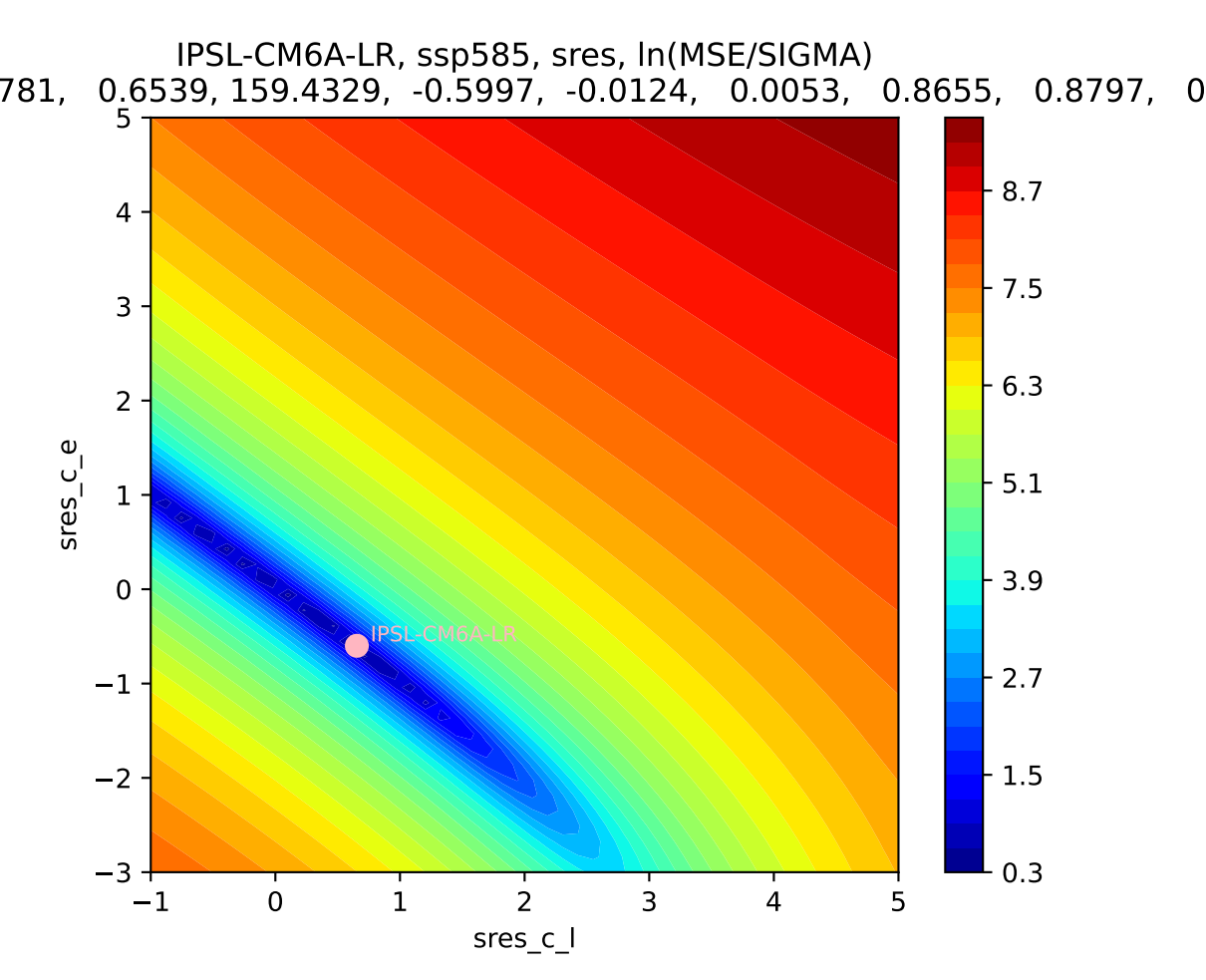

IPSL-CM6A-LR, ssp585, sres
ESM
Fit
sres
ΔT

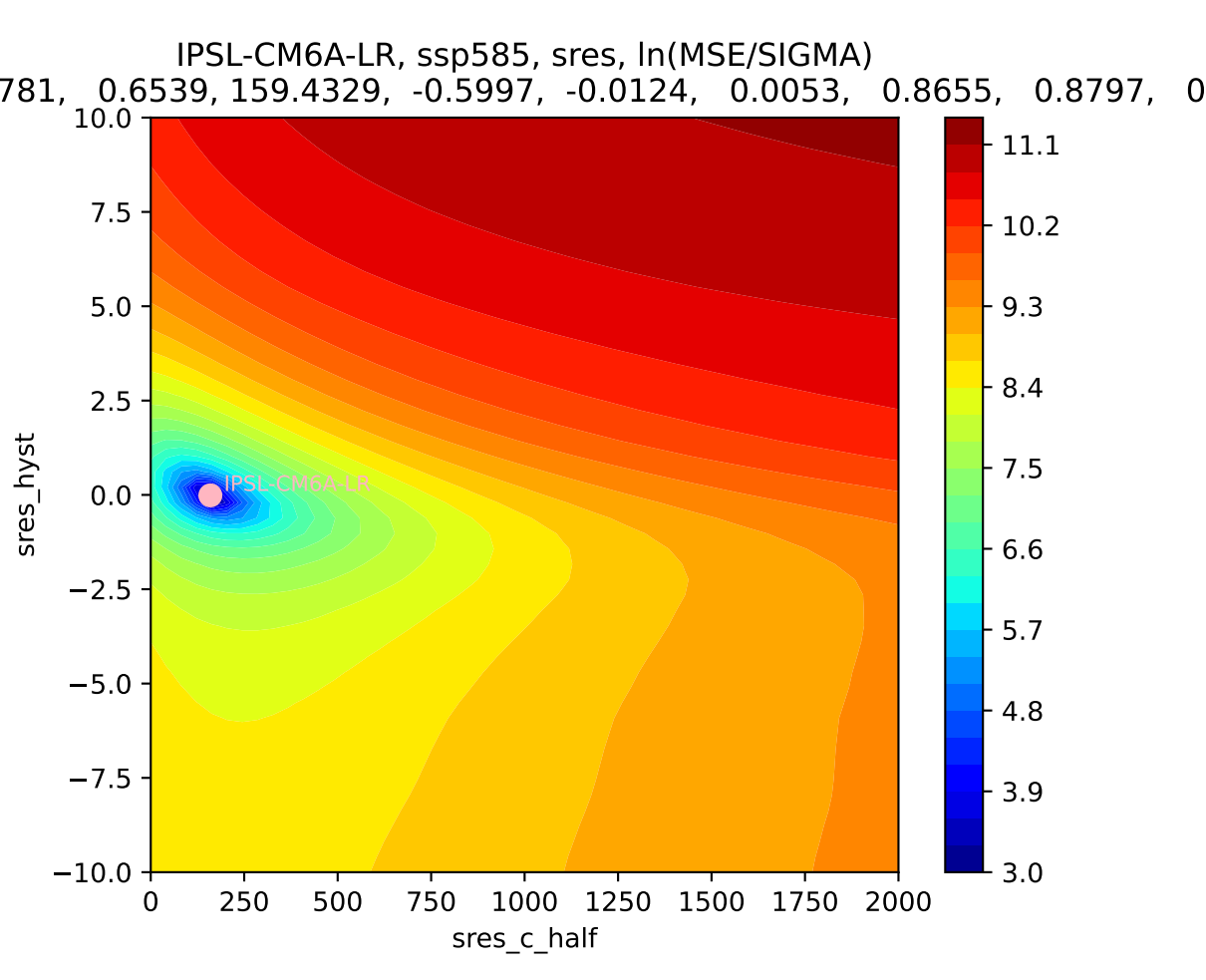

IPSL-CM6A-LR, ssp585, sres
ESM-Fit
sres, ESM - FIT
ΔT

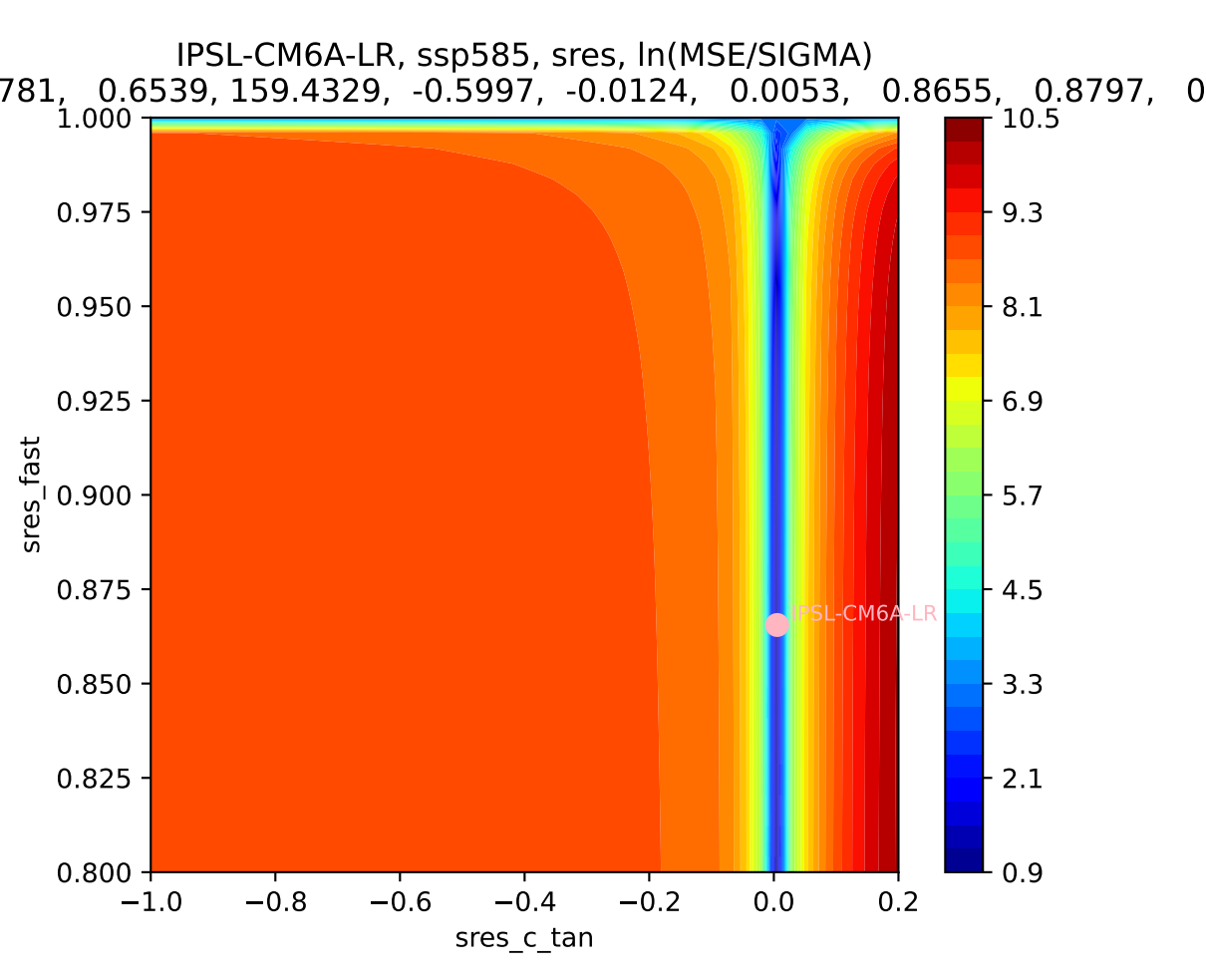

IPSL-CM6A-LR, ssp585, sres
ESM
Fit
sres
c_atm

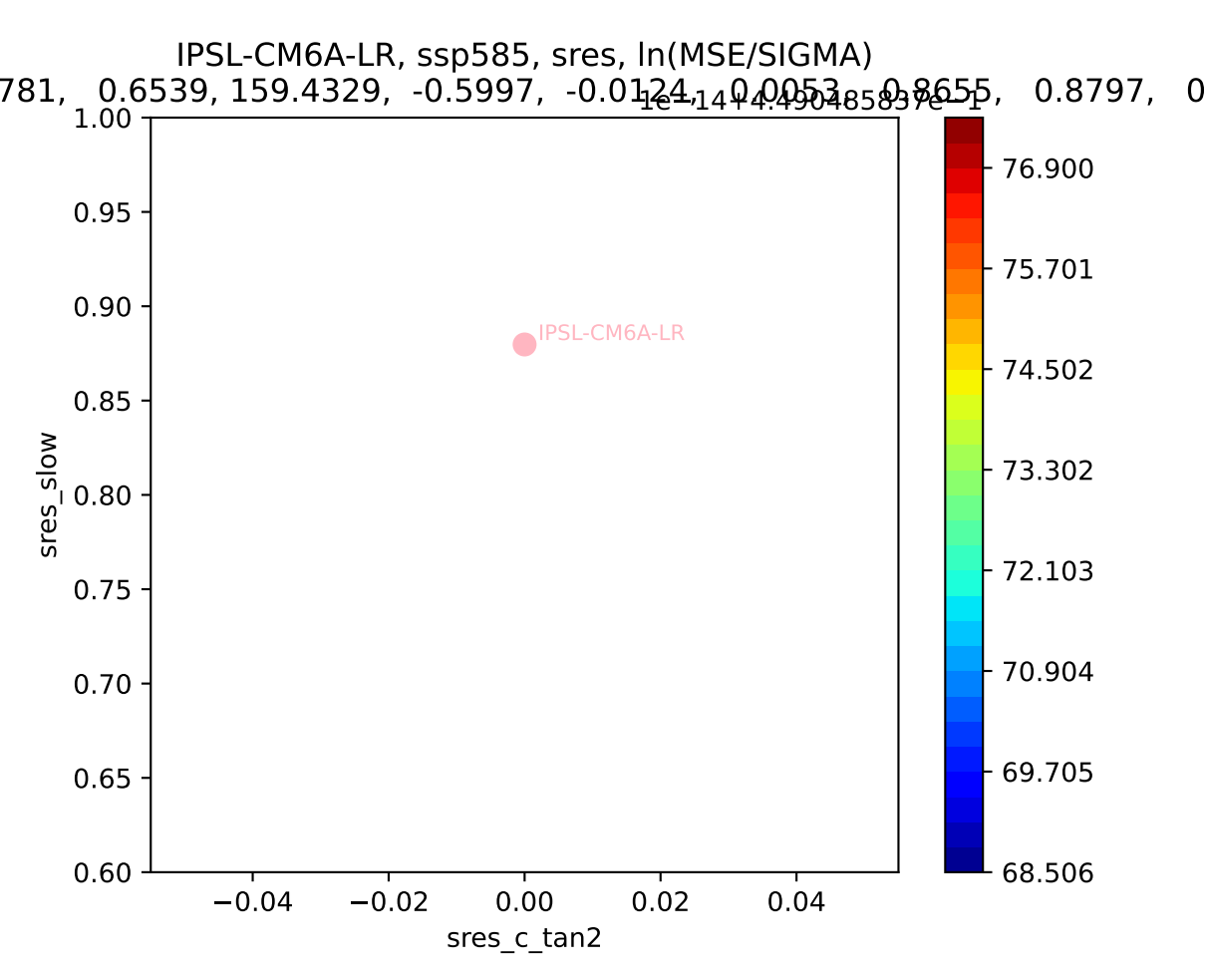

IPSL-CM6A-LR, ssp585, sres
ESM-Fit
sres, ESM - FIT
c_atm

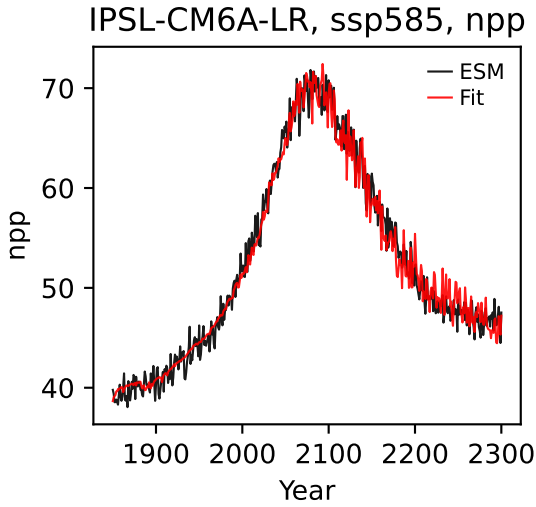

IPSL-CM6A-LR, ssp585, sres, ln(MSE/SIGMA)
781, 0.6539, 159.4329, -0.5997, -0.0124, 0.0053, 0.8655, 0.8797, 0
IPSL-CM6A-LR
sres_t_e
sres_t_l
−3
−2
−1
0
1
2
11.6
10.8
10.0
9.2
8.4
7.6
6.8
6.0
5.2

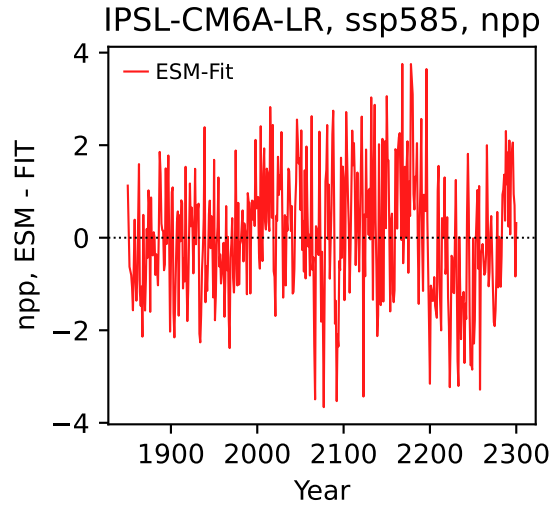

IPSL-CM6A-LR, ssp585, sres, ln(MSE/SIGMA)
781, 0.6539, 159.4329, -0.5997, -0.0124, 0.0053, 0.8655, 0.8797, 0
IPSL-CM6A-LR
sres_c_e
sres_c_l
5
4
3
2
1
0
−1
−2
−3
−1
0
1
2
3
4
5
8.7
7.5
6.3
5.1
3.9
2.7
1.5
0.3

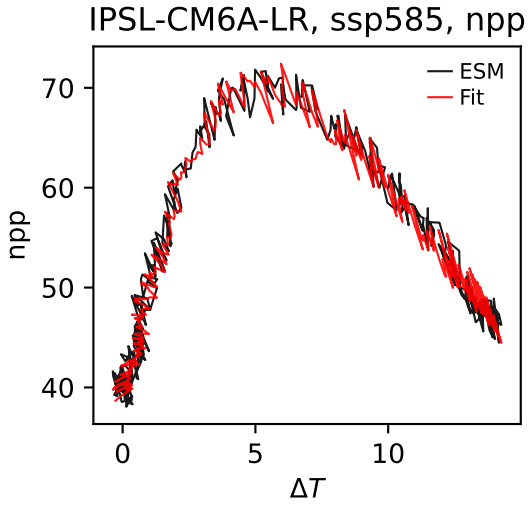

IPSL-CM6A-LR, ssp585, sres, ln(MSE/SIGMA)
781, 0.6539, 159.4329, -0.5997, -0.0124, 0.0053, 0.8655, 0.8797, 0
IPSL-CM6A-LR
sres_hyst
sres_c_half
10.0
7.5
5.0
2.5
0.0
−2.5
−5.0
−7.5
−10.0
0
250
500
750
1000
1250
1500
1750
2000
11.1
10.2
9.3
8.4
7.5
6.6
5.7
4.8
3.9
3.0

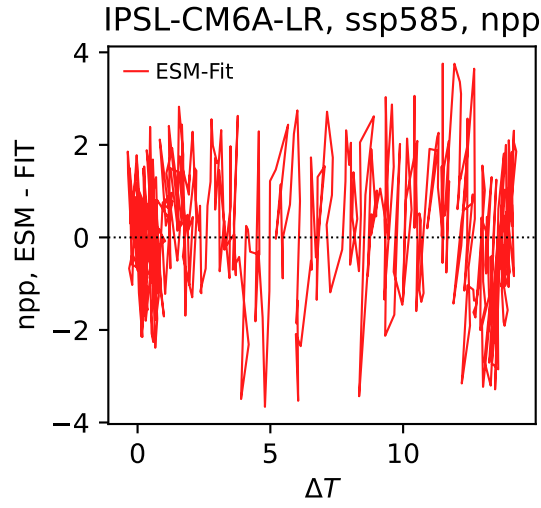

IPSL-CM6A-LR, ssp585, sres, ln(MSE/SIGMA)
781, 0.6539, 159.4329, -0.5997, -0.0124, 0.0053, 0.8655, 0.8797, 0
1.000
0.975
0.950
0.925
0.900
0.875
0.850
0.825
0.800
sres_fast
IPSL-CM6A-LR
10.5
9.3
8.1
6.9
5.7
4.5
3.3
2.1
0.9
−1.0
−0.8
−0.6
−0.4
−0.2
0.0
0.2
sres_c_tan

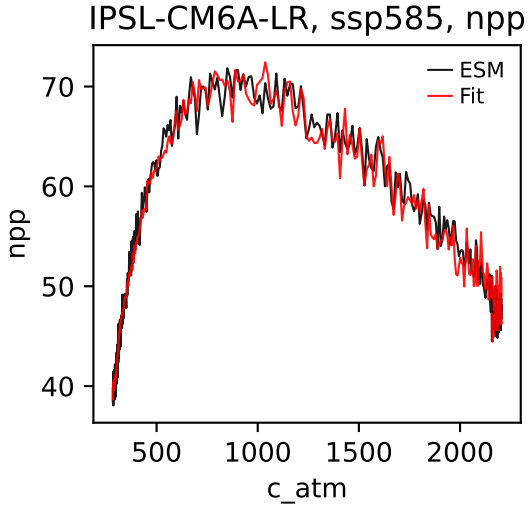

IPSL-CM6A-LR, ssp585, sres, ln(MSE/SIGMA)
781, 0.6539, 159.4329, -0.5997, -0.0124, 0.0053, 0.8655, 0.8797, 0
1e−14+4.490485837e−1
IPSL-CM6A-LR
sres_slow
sres_c_tan2
1.00
0.95
0.90
0.85
0.80
0.75
0.70
0.65
0.60
−0.04
−0.02
0.00
0.02
0.04
76.900
75.701
74.502
73.302
72.103
70.904
69.705
68.506

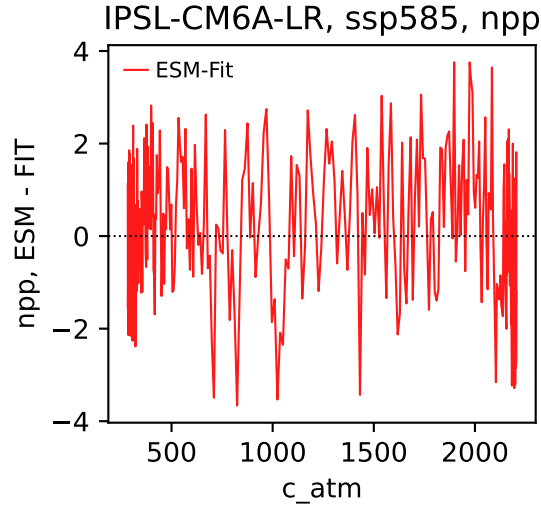

IPSL-CM6A-LR, ssp585, npp
ESM
Fit
npp
Year

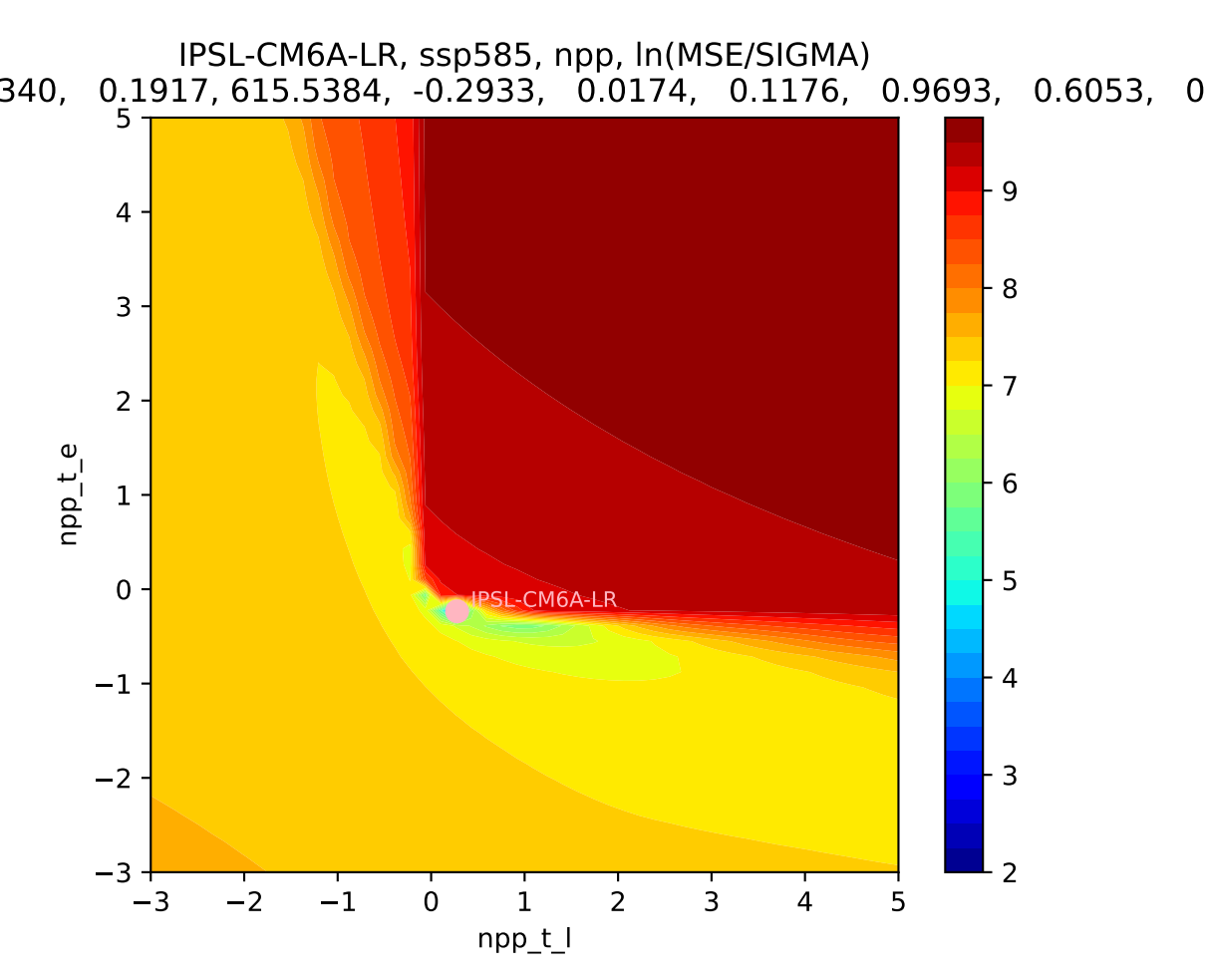

IPSL-CM6A-LR, ssp585, npp
ESM-Fit
npp, ESM - FIT
Year

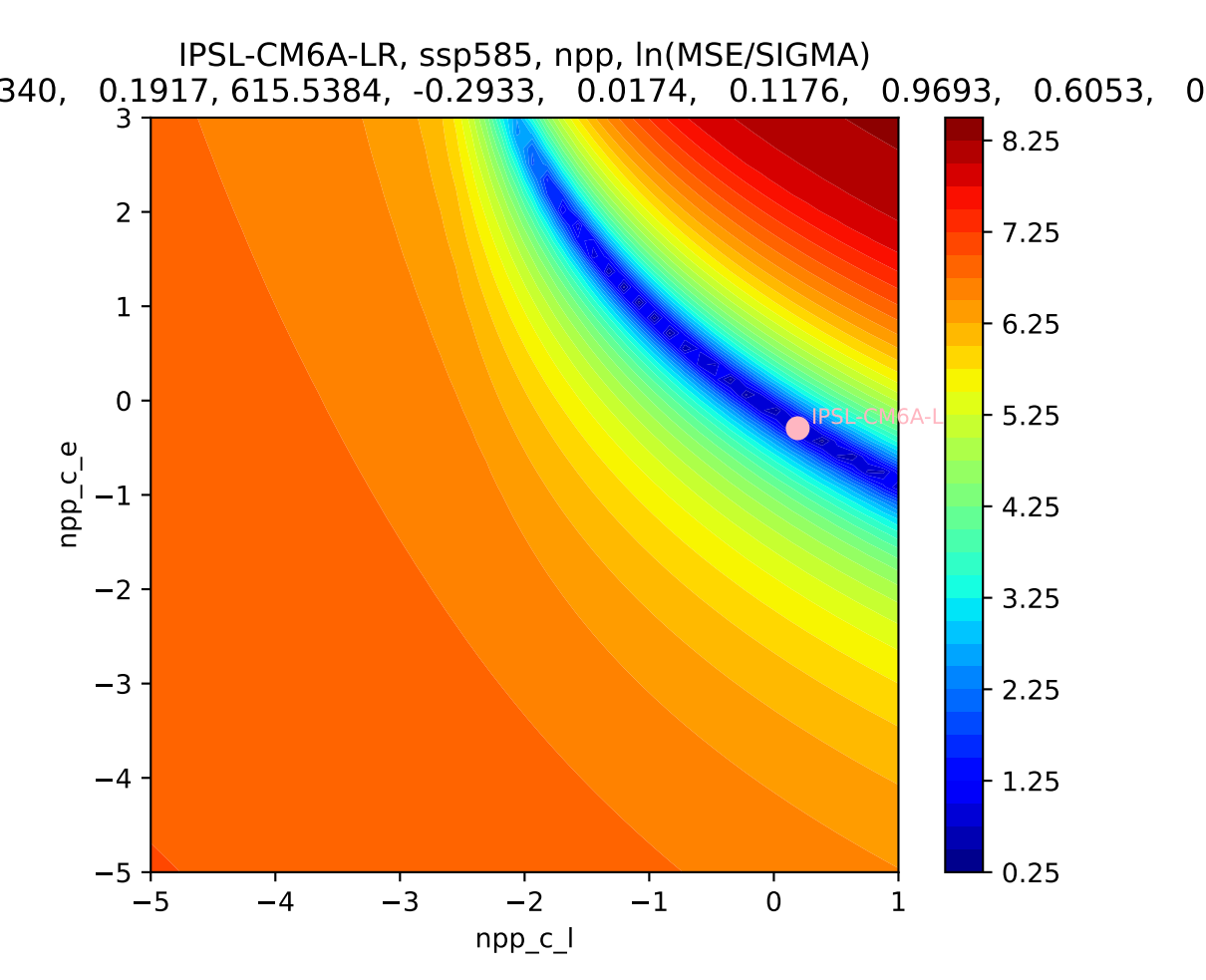

IPSL-CM6A-LR, ssp585, npp
ESM
Fit
npp
ΔT

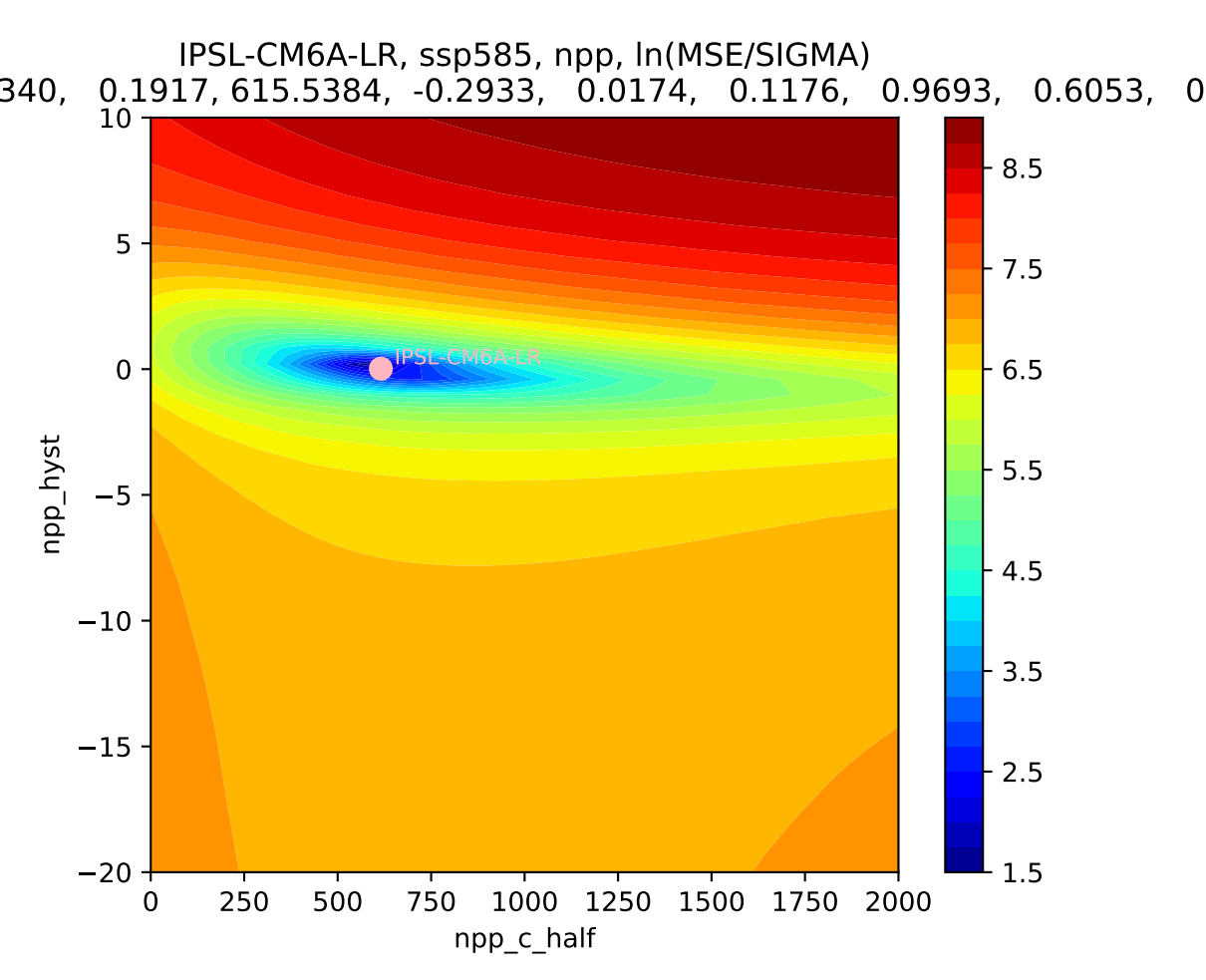

IPSL-CM6A-LR, ssp585, npp
ESM-Fit
npp, ESM - FIT
ΔT


IPSL-CM6A-LR, ssp585, npp
ESM
Fit
npp
c_atm


IPSL-CM6A-LR, ssp585, npp
ESM-Fit
npp, ESM - FIT
c_atm


IPSL-CM6A-LR, ssp585, npp, ln(MSE/SIGMA)
340, 0.1917, 615.5384, -0.2933, 0.0174, 0.1176, 0.9693, 0.6053, 0
IPSL-CM6A-LR
npp_t_e
npp_t_l
5
4
3
2
1
0
−1
−2
−3
−3
−2
−1
0
1
2
3
4
5
9
8
7
6
5
4
3
2


IPSL-CM6A-LR, ssp585, npp, ln(MSE/SIGMA)
340, 0.1917, 615.5384, -0.2933, 0.0174, 0.1176, 0.9693, 0.6053, 0
IPSL-CM6A-L
npp_c_e
npp_c_l
3
2
1
0
−1
−2
−3
−4
−5
−5
−4
−3
−2
−1
0
1
8.25
7.25
6.25
5.25
4.25
3.25
2.25
1.25
0.25


IPSL-CM6A-LR, ssp585, npp, ln(MSE/SIGMA)
340, 0.1917, 615.5384, -0.2933, 0.0174, 0.1176, 0.9693, 0.6053, 0
IPSL-CM6A-LR
npp_hyst
npp_c_half
10
5
0
−5
−10
−15
−20
0
250
500
750
1000
1250
1500
1750
2000
8.5
7.5
6.5
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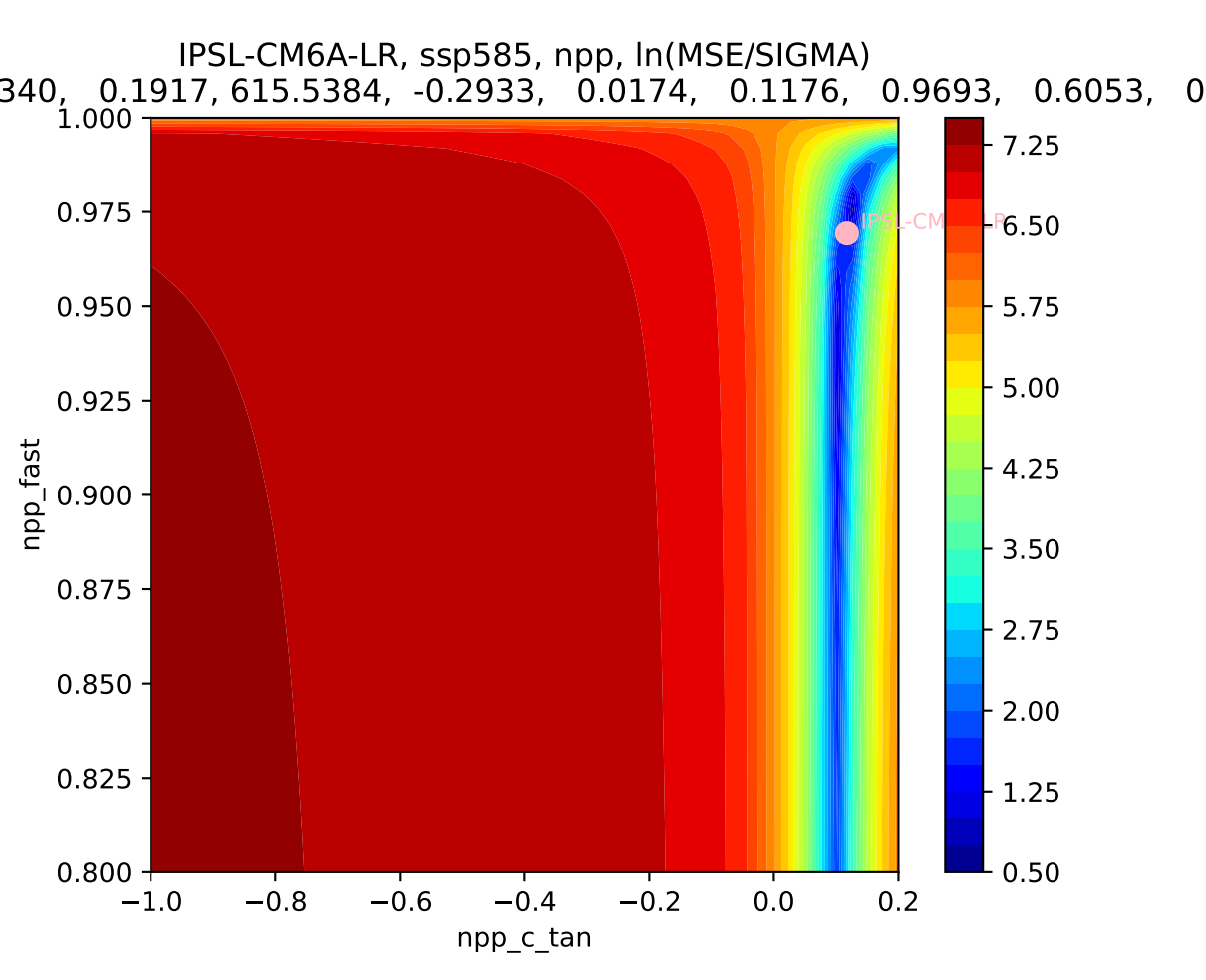
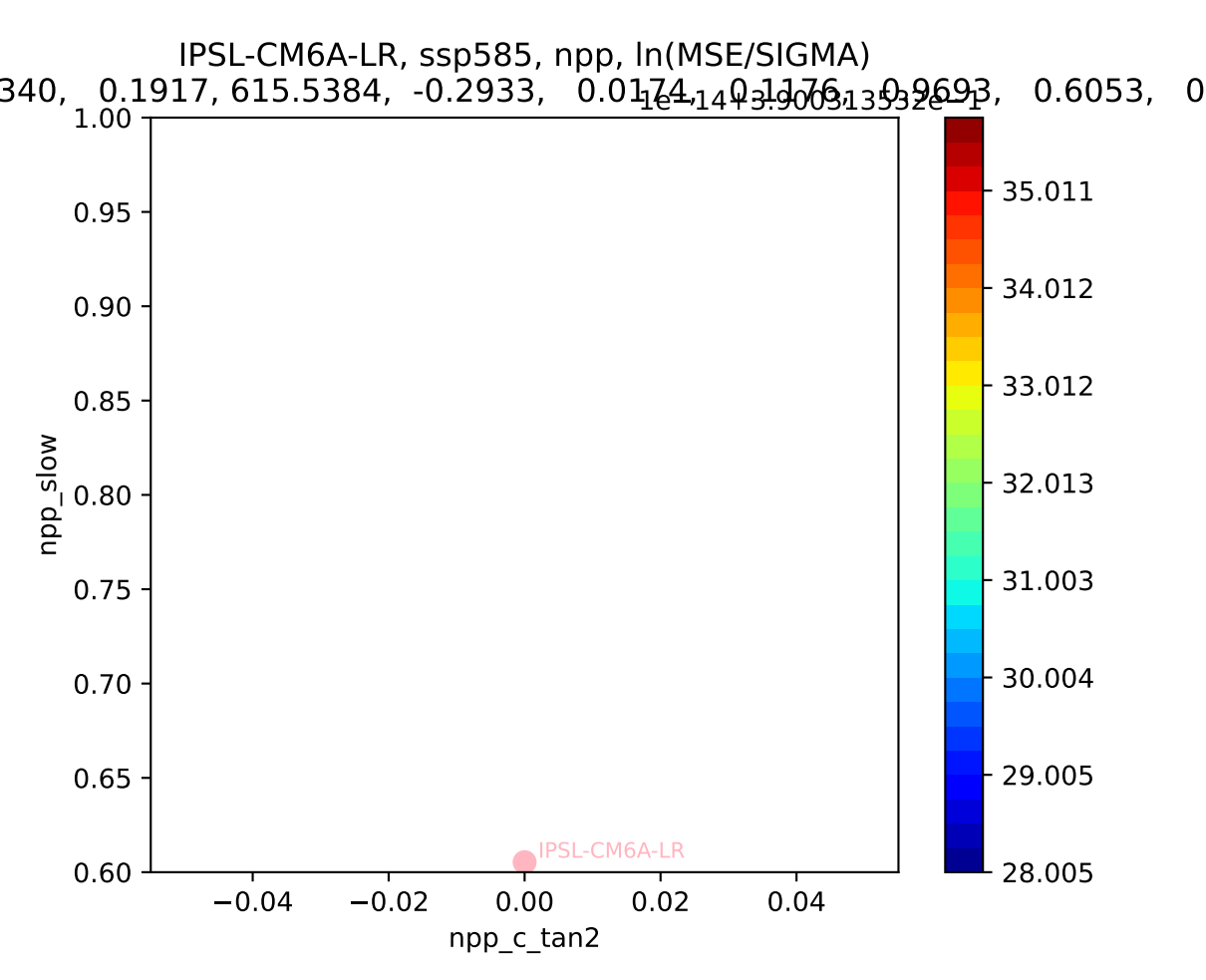
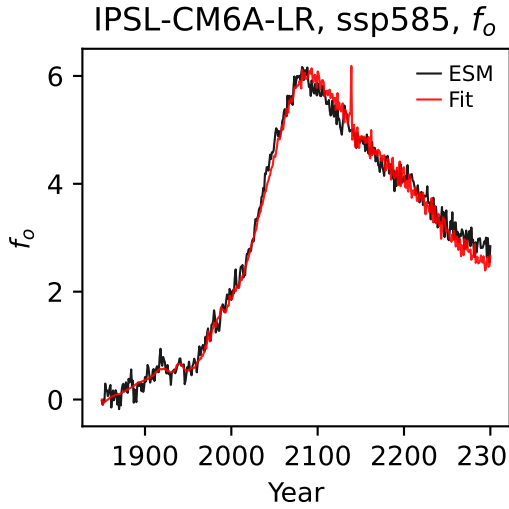
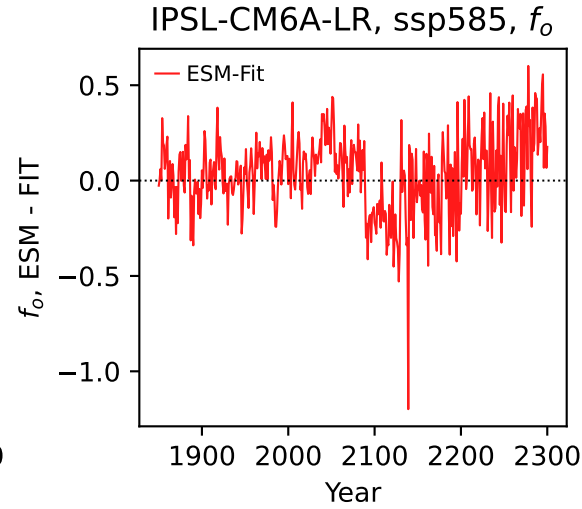
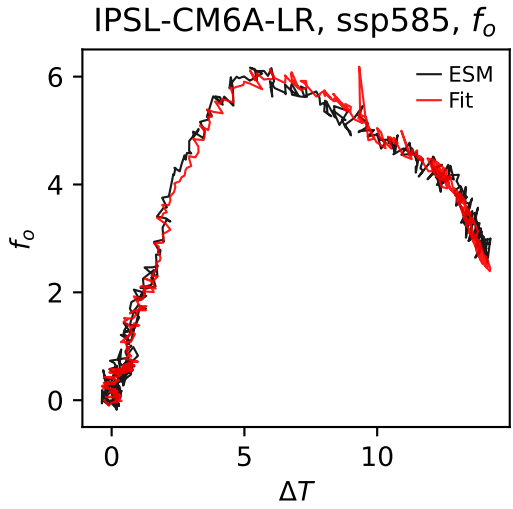
3.5
2.5
1.5

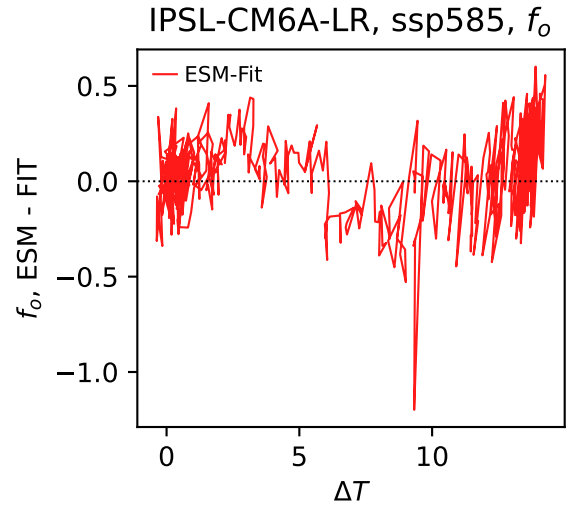

IPSL-CM6A-LR, ssp585, npp, ln(MSE/SIGMA)
340, 0.1917, 615.5384, -0.2933, 0.0174, 0.1176, 0.9693, 0.6053, 0
1.000
0.975
0.950
0.925
0.900
0.875
0.850
0.825
0.800
npp_fast
−1.0
−0.8
−0.6
−0.4
−0.2
0.0
0.2
npp_c_tan
7.25
6.50
5.75
5.00
4.25
3.50
2.75
2.00
1.25
0.50

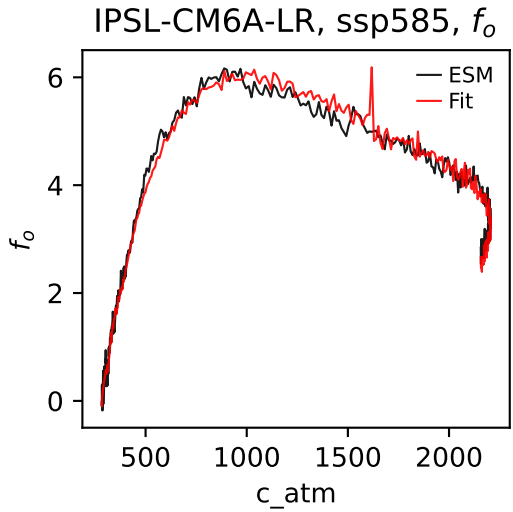

IPSL-CM6A-LR, ssp585, npp, ln(MSE/SIGMA)
340, 0.1917, 615.5384, -0.2933, 0.0174, 0.1176, 0.9693, 0.6053, 0
1e−14+3.900313532e−1
1.00
0.95
0.90
0.85
0.80
0.75
0.70
0.65
0.60
npp_slow
−0.04
−0.02
0.00
0.02
0.04
npp_c_tan2
IPSL-CM6A-LR
35.011
34.012
33.012
32.013
31.003
30.004
29.005
28.005

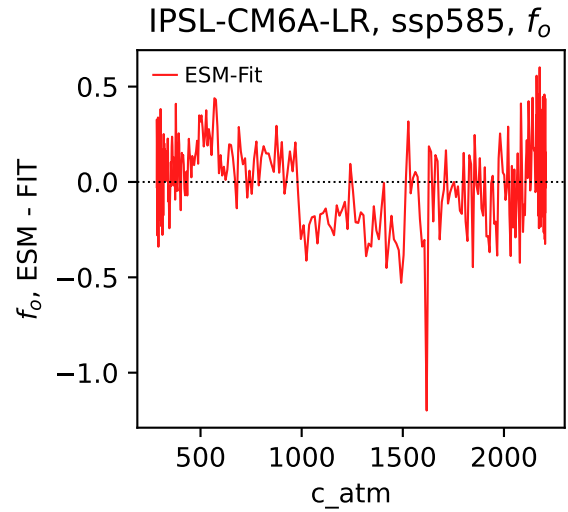

IPSL-CM6A-LR, ssp585, f_o
ESM
Fit
f_o
Year

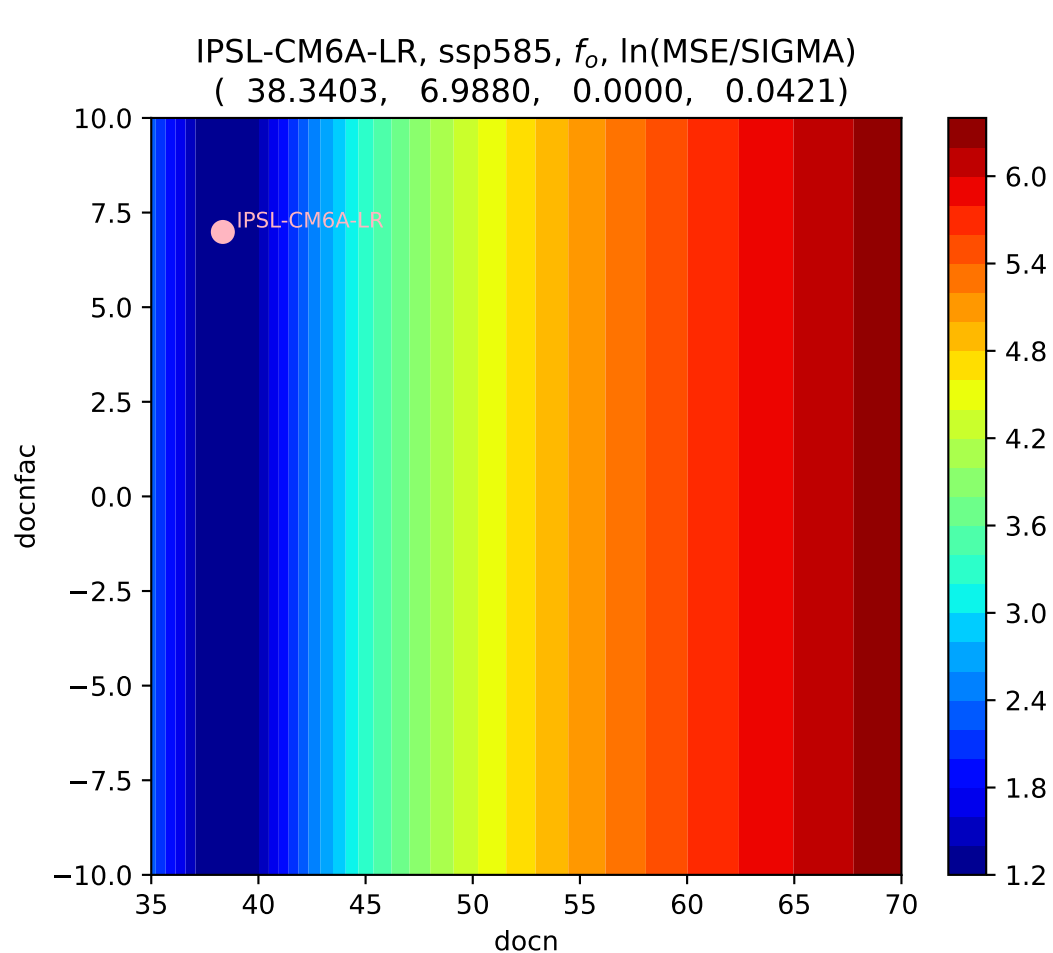

IPSL-CM6A-LR, ssp585, f_o
ESM-Fit
f_o, ESM - FIT
Year

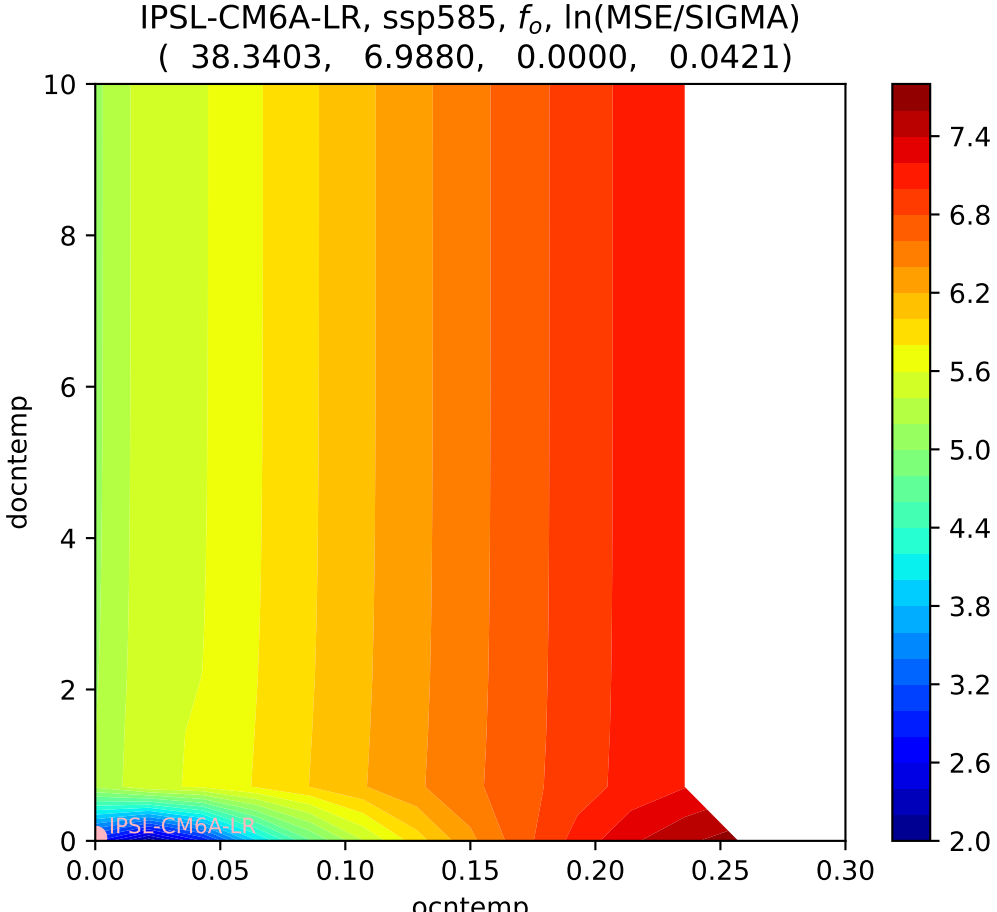

IPSL-CM6A-LR, ssp585, f_o
ESM
Fit
f_o
ΔT


IPSL-CM6A-LR, ssp585, f_o
ESM-Fit
f_o, ESM - FIT
ΔT


IPSL-CM6A-LR, ssp585, f_o
ESM
Fit
f_o
c_atm


IPSL-CM6A-LR, ssp585, f_o
ESM-Fit
f_o, ESM - FIT
c_atm


IPSL-CM6A-LR, ssp585, f_o, ln(MSE/SIGMA)
(38.3403, 6.9880, 0.0000, 0.0421)
IPSL-CM6A-LR
docnfac
docn
10.0
7.5
5.0
2.5
0.0
−2.5
−5.0
−7.5
−10.0
35
40
45
50
55
60
65
70
6.0
5.4
4.8
4.2
3.6
3.0
2.4
1.8
1.2


IPSL-CM6A-LR, ssp585, f_o, ln(MSE/SIGMA)
(38.3403, 6.9880, 0.0000, 0.0421)
docntemp
ocntemp
IPSL-CM6A-LR
0
2
4
6
8
10
0.00
0.05
0.10
0.15
0.20
0.25
0.30
7.4
6.8
6.2
5.6
5.0
4.4
3.8
3.2
2.6
2.0