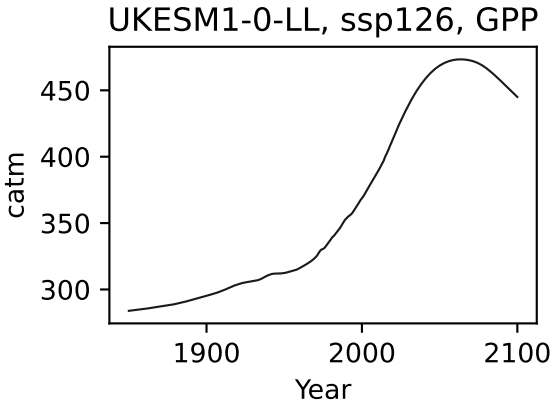
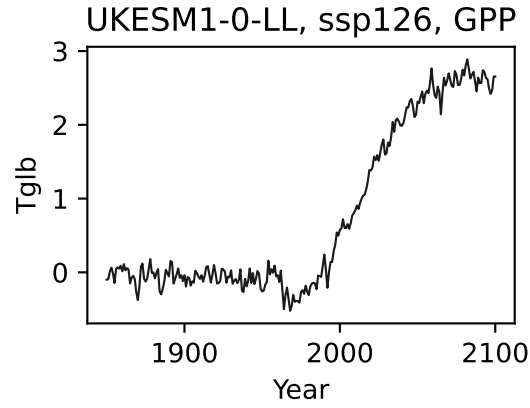
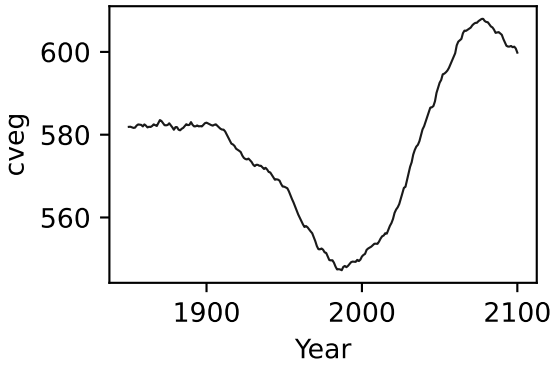
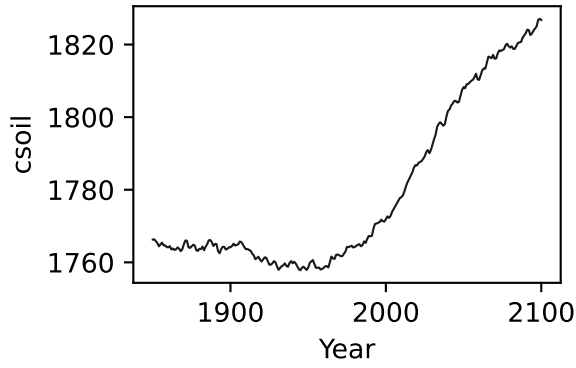
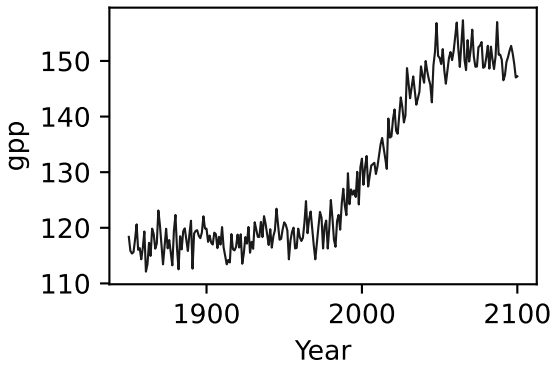
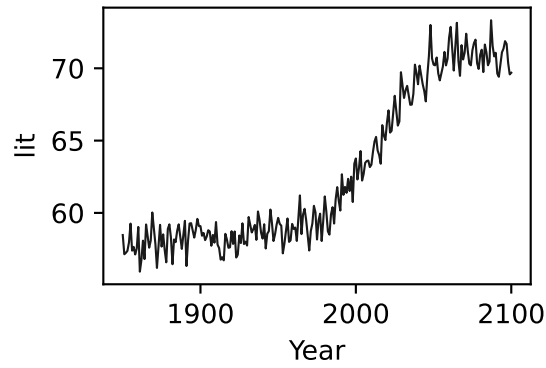

UKESM1-0-LL, ssp126, GPP
catm
450
400
350
300
1900
2000
2100
Year

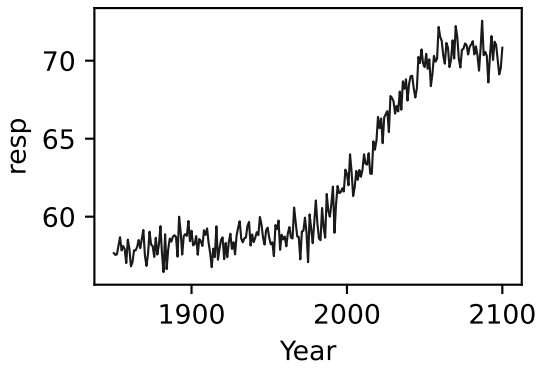

UKESM1-0-LL, ssp126, GPP
Tglb
3
2
1
0
1900
2000
2100
Year

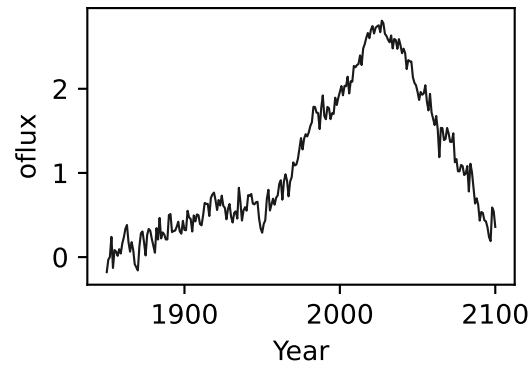

cveg
600
580
560
1900
2000
2100
Year

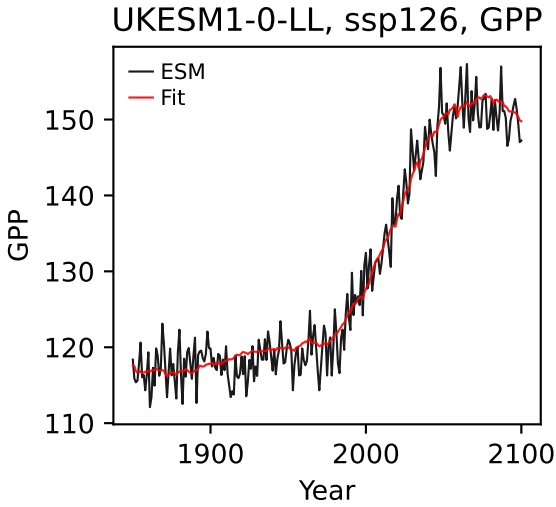

csoil
1820
1800
1780
1760
1900
2000
2100
Year

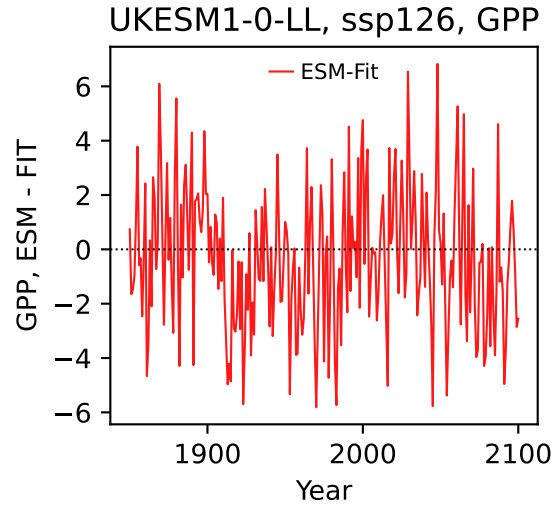

gpp
150
140
130
120
110
1900
2000
2100
Year

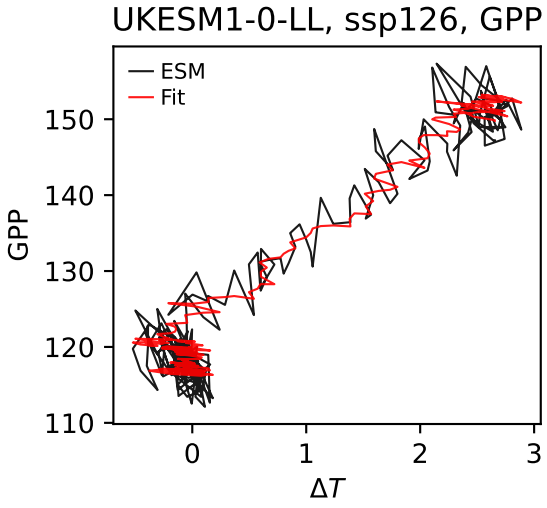

lit
70
65
60
1900
2000
2100
Year

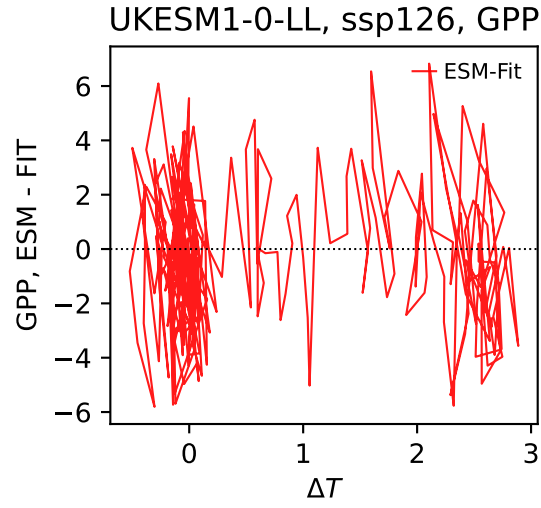

resp
70
65
60
1900
2000
2100
Year

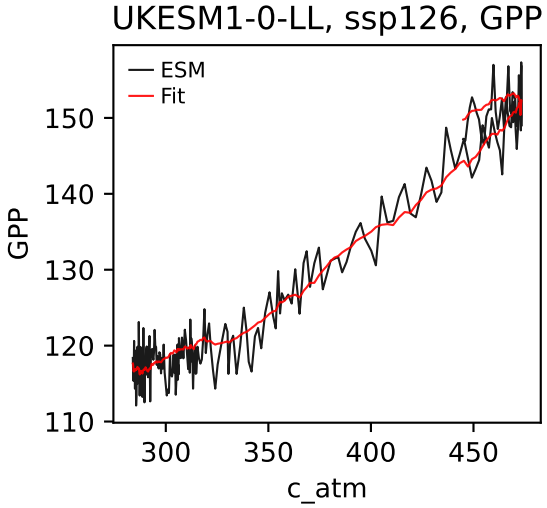

oflux
2
1
0
1900
2000
2100
Year

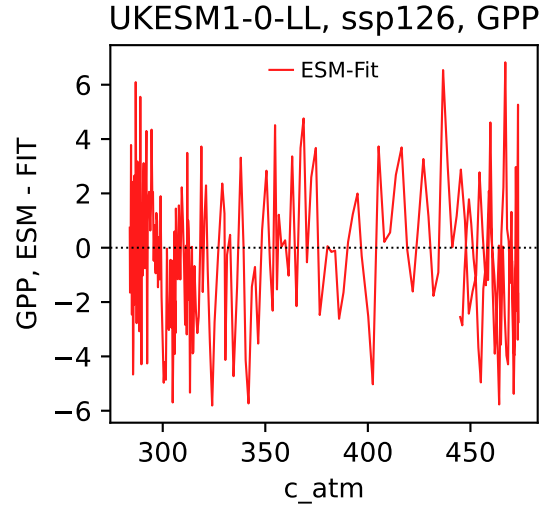

UKESM1-0-LL, ssp126, GPP
ESM
Fit
GPP
Year

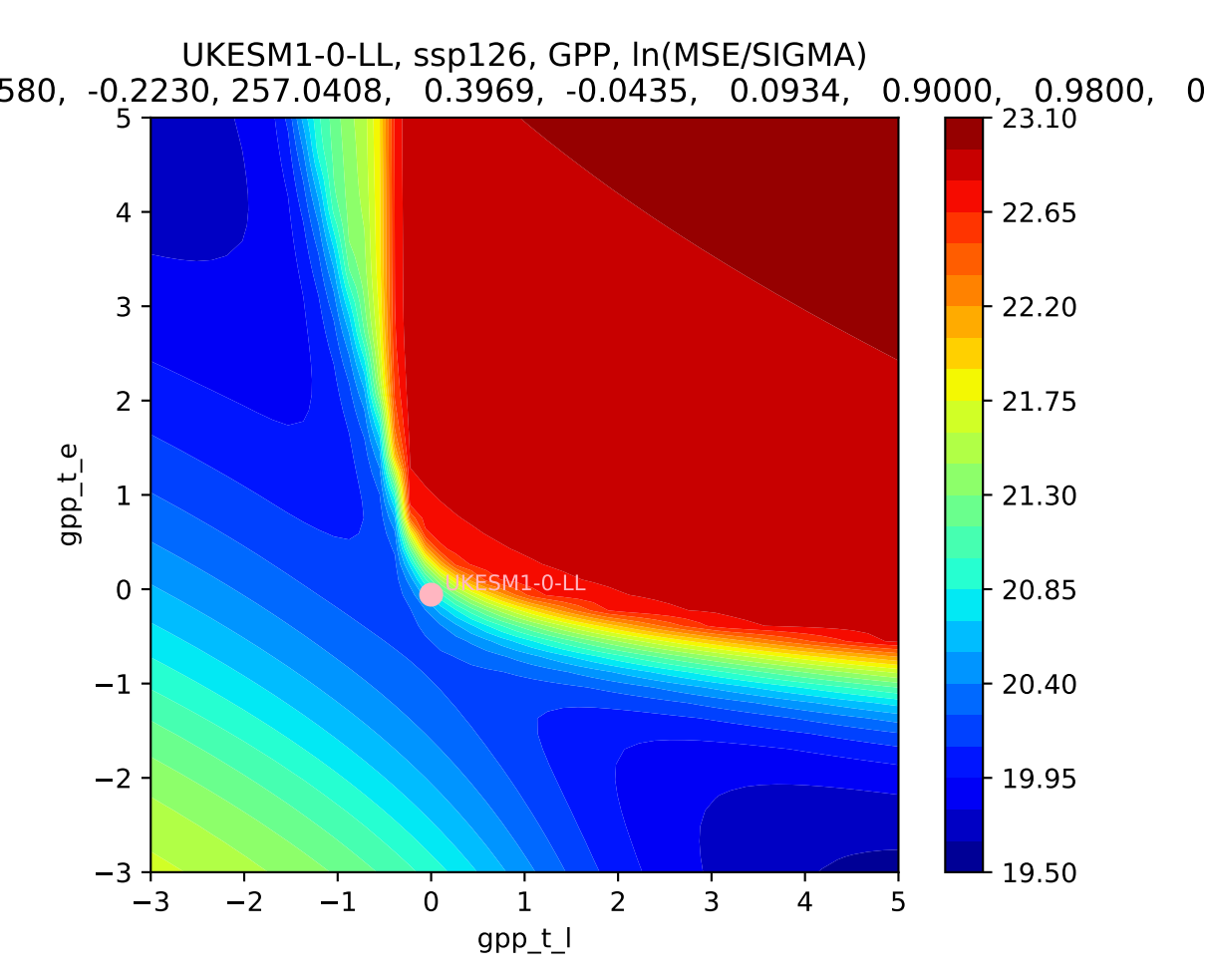

UKESM1-0-LL, ssp126, GPP
ESM-Fit
GPP, ESM - FIT
Year

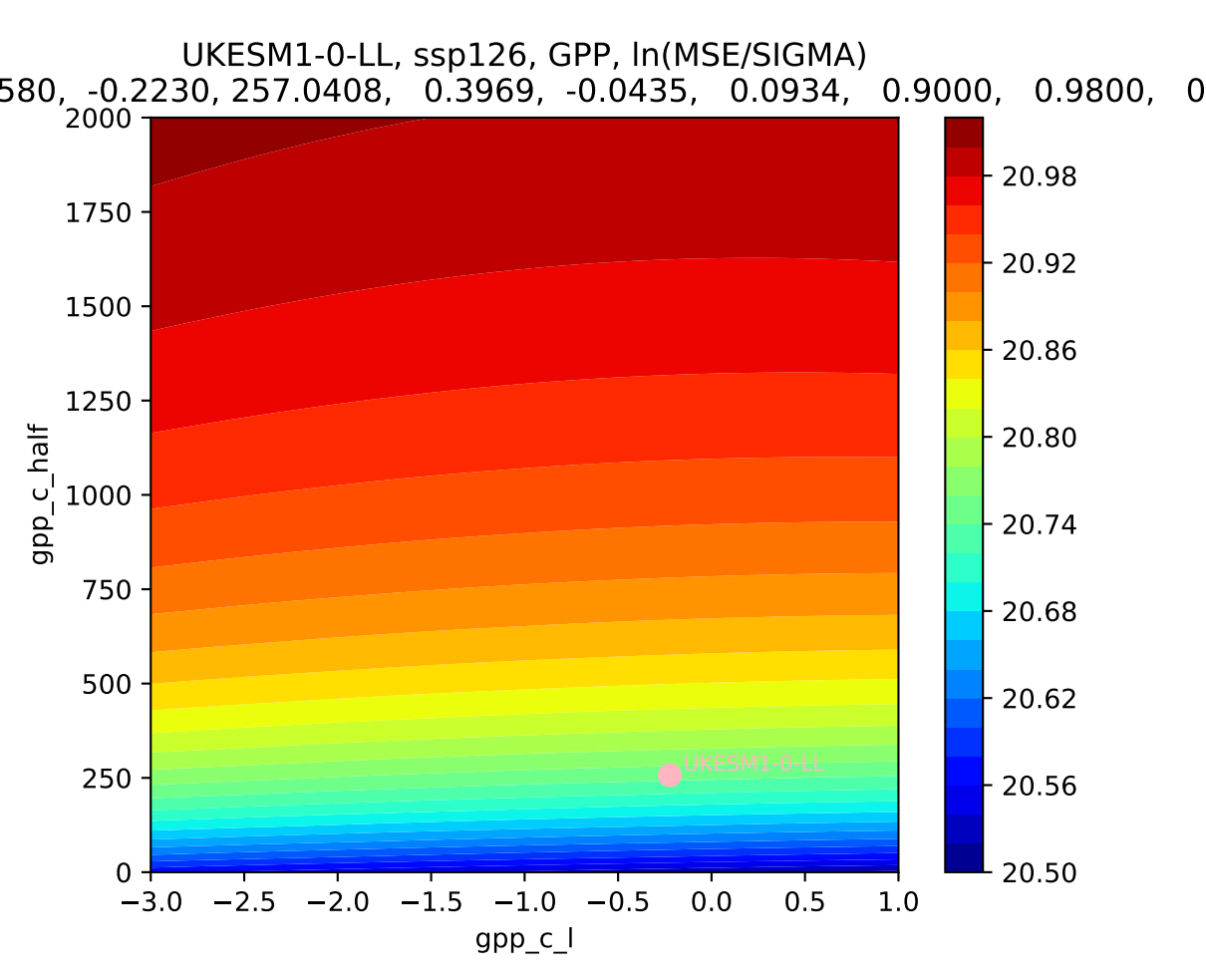

UKESM1-0-LL, ssp126, GPP
ESM
Fit
GPP
ΔT

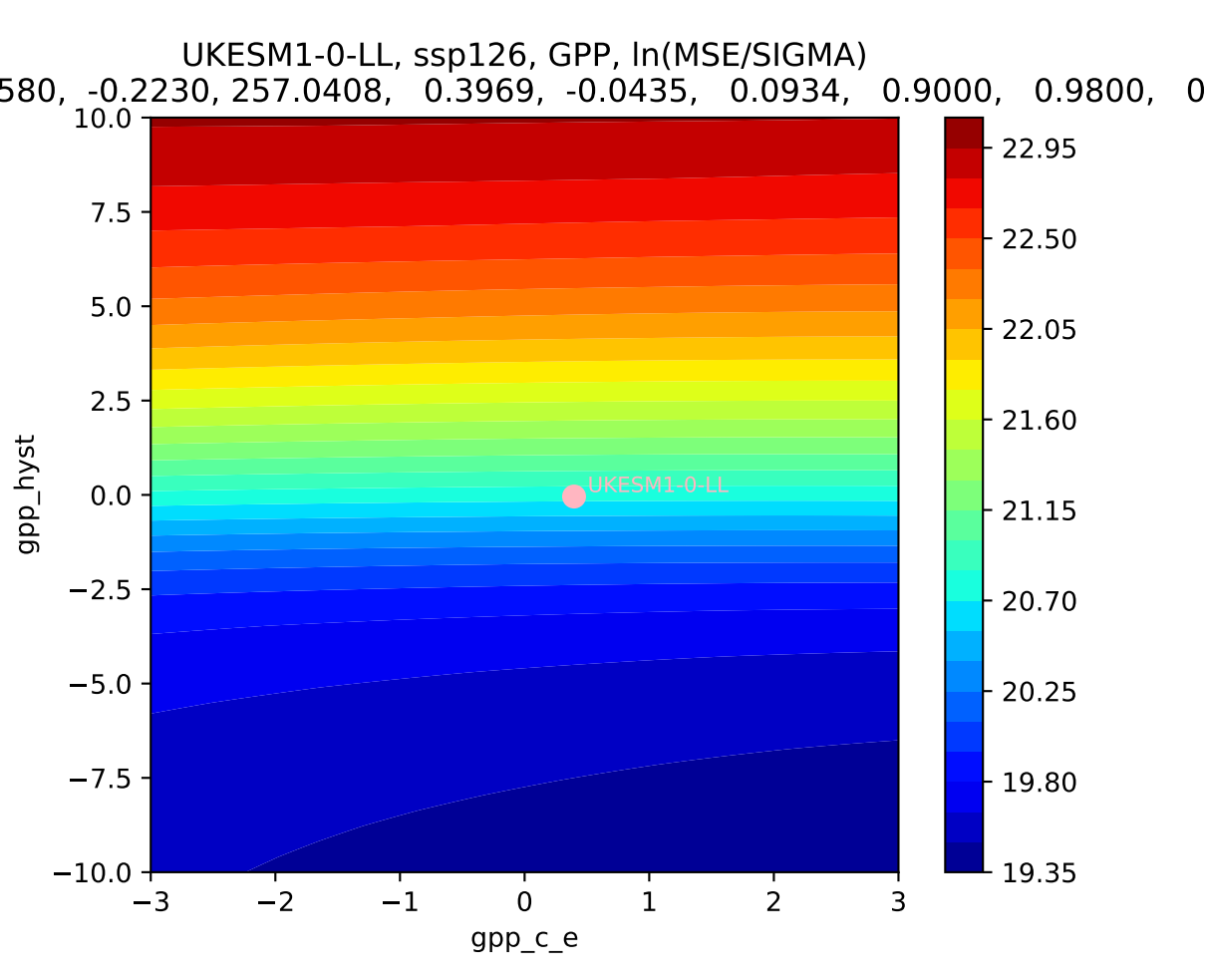

UKESM1-0-LL, ssp126, GPP
ESM-Fit
GPP, ESM - FIT
ΔT

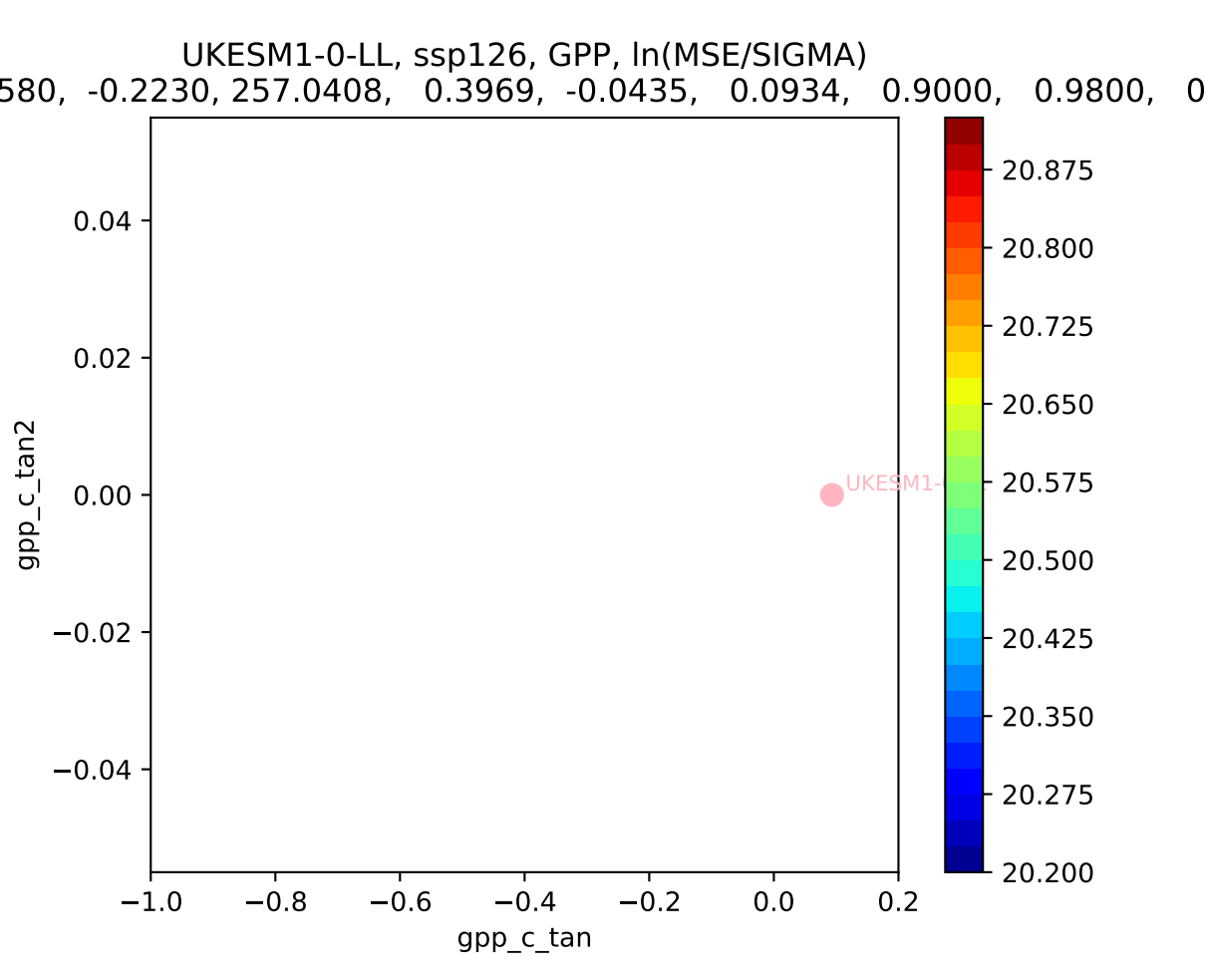

UKESM1-0-LL, ssp126, GPP
ESM
Fit
GPP
c_atm

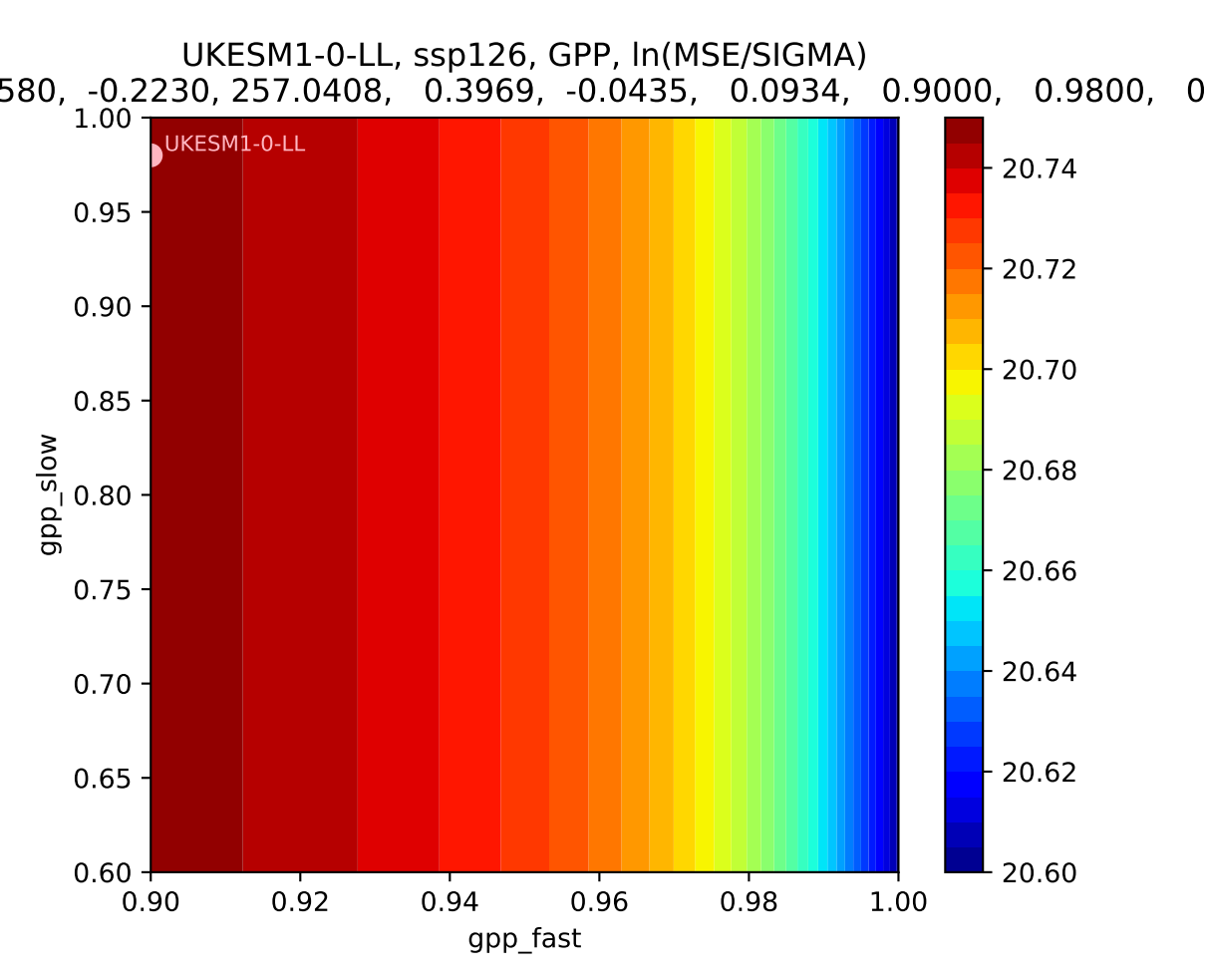

UKESM1-0-LL, ssp126, GPP
ESM-Fit
GPP, ESM - FIT
c_atm

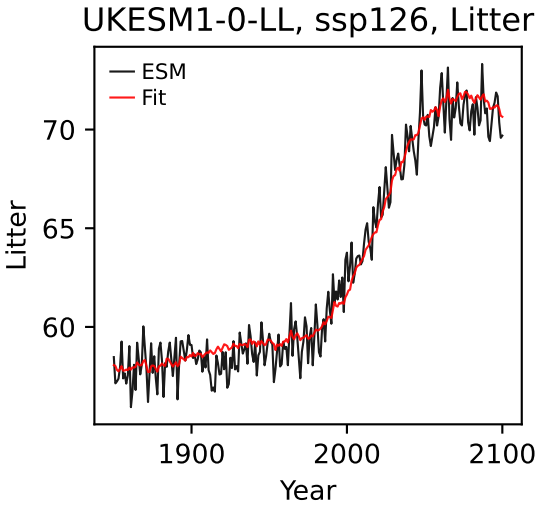

UKESM1-0-LL, ssp126, GPP, ln(MSE/SIGMA)
580, -0.2230, 257.0408, 0.3969, -0.0435, 0.0934, 0.9000, 0.9800, 0
UKESM1-0-LL
gpp_t_e
gpp_t_l
5
4
3
2
1
0
−1
−2
−3
−3
−2
−1
0
1
2
3
4
5
23.10
22.65
22.20
21.75
21.30
20.85
20.40
19.95
19.50

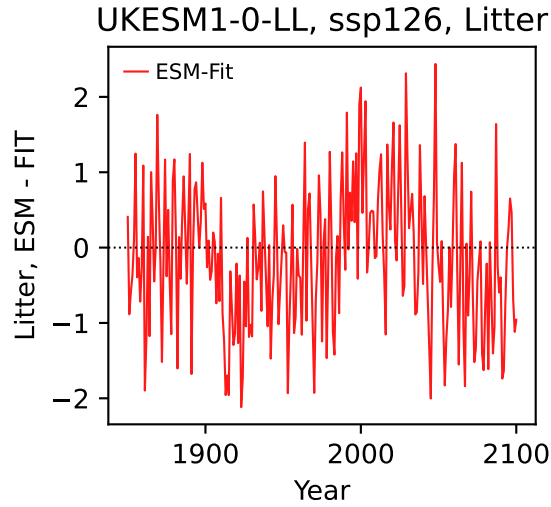

UKESM1-0-LL, ssp126, GPP, ln(MSE/SIGMA)
580, -0.2230, 257.0408, 0.3969, -0.0435, 0.0934, 0.9000, 0.9800, 0
gpp_c_half
gpp_c_l
UKESM1-0-LL
2000
1750
1500
1250
1000
750
500
250
0
−3.0
−2.5
−2.0
−1.5
−1.0
−0.5
0.0
0.5
1.0
20.98
20.92
20.86
20.80
20.74
20.68
20.62
20.56
20.50

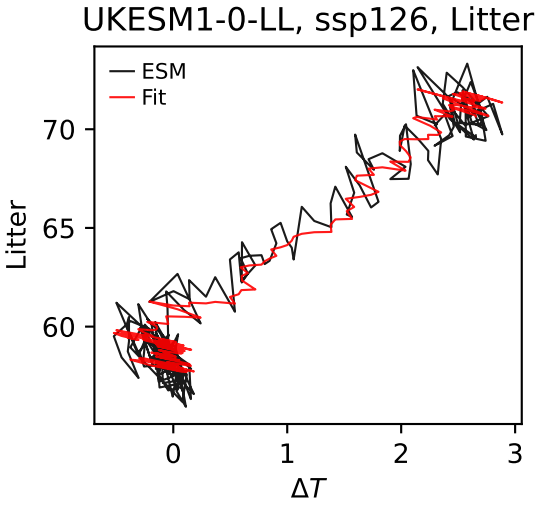

UKESM1-0-LL, ssp126, GPP, ln(MSE/SIGMA)
580, -0.2230, 257.0408, 0.3969, -0.0435, 0.0934, 0.9000, 0.9800, 0
UKESM1-0-LL
gpp_hyst
gpp_c_e
10.0
7.5
5.0
2.5
0.0
−2.5
−5.0
−7.5
−10.0
−3
−2
−1
0
1
2
3
22.95
22.50
22.05
21.60
21.15
20.70
20.25
19.80
19.35

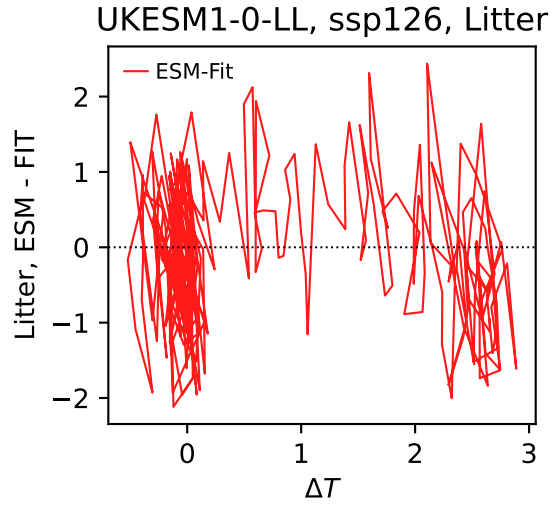

UKESM1-0-LL, ssp126, GPP, ln(MSE/SIGMA)
580, -0.2230, 257.0408, 0.3969, -0.0435, 0.0934, 0.9000, 0.9800, 0
gpp_c_tan2
gpp_c_tan
0.04
0.02
0.00
−0.02
−0.04
−1.0
−0.8
−0.6
−0.4
−0.2
0.0
0.2
20.875
20.800
20.725
20.650
20.575
20.500
20.425
20.350
20.275
20.200
UKESM1-

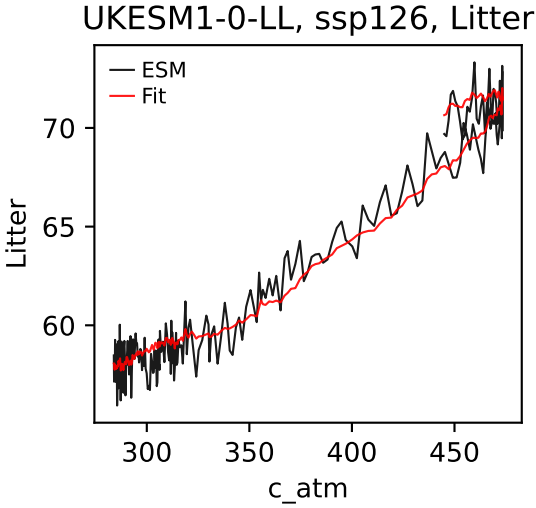

UKESM1-0-LL, ssp126, GPP, ln(MSE/SIGMA)
580, -0.2230, 257.0408, 0.3969, -0.0435, 0.0934, 0.9000, 0.9800, 0
UKESM1-0-LL
gpp_slow
gpp_fast
1.00
0.95
0.90
0.85
0.80
0.75
0.70
0.65
0.60
0.90
0.92
0.94
0.96
0.98
1.00
20.74
20.72
20.70
20.68
20.66
20.64
20.62
20.60

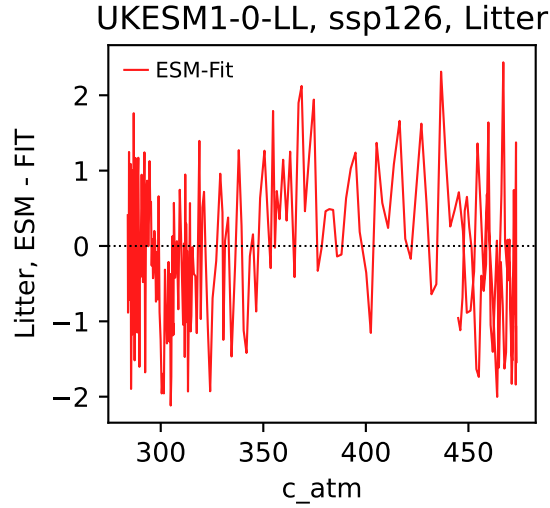

UKESM1-0-LL, ssp126, Litter
ESM
Fit
Litter
Year

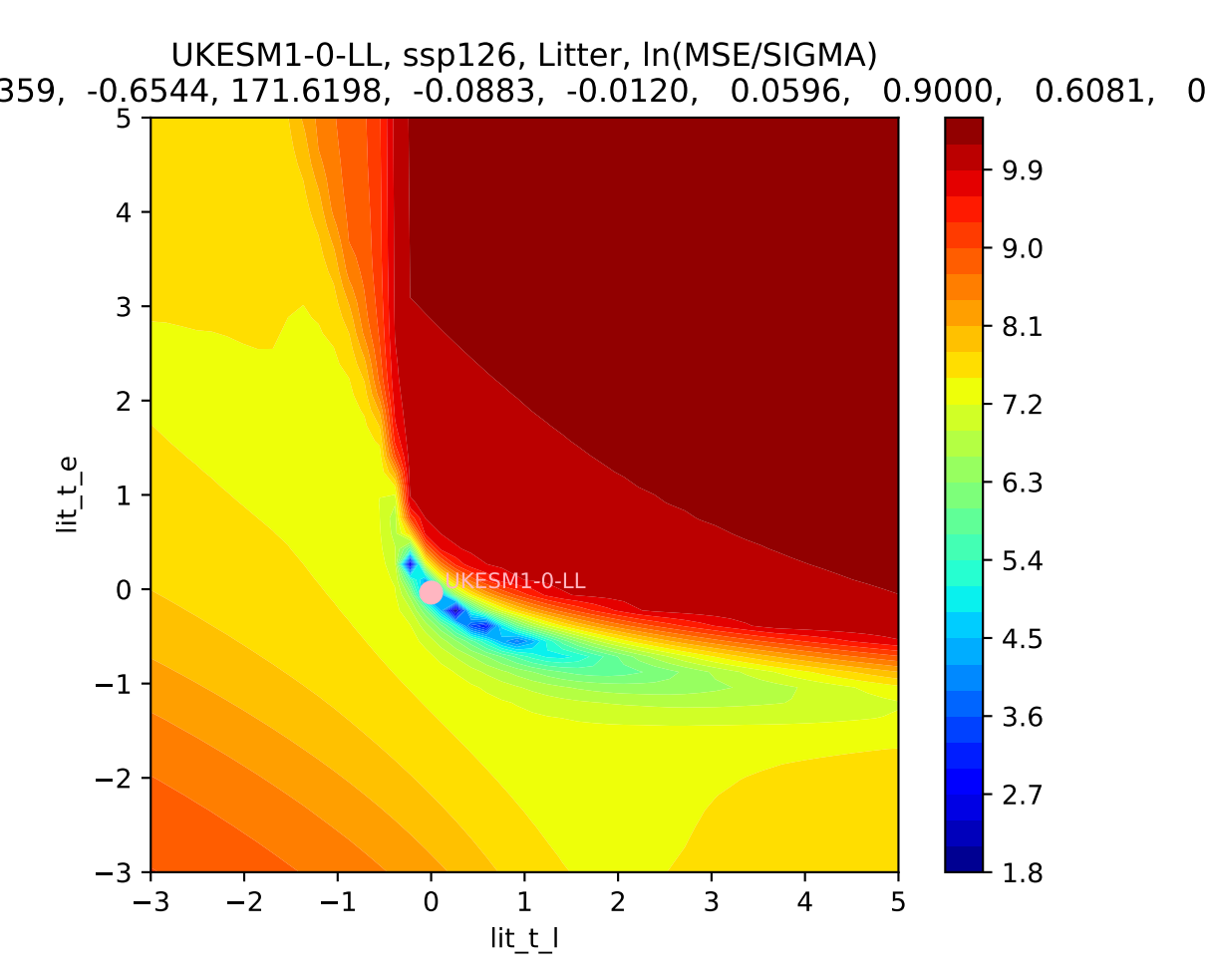

UKESM1-0-LL, ssp126, Litter
ESM-Fit
Litter, ESM - FIT
Year

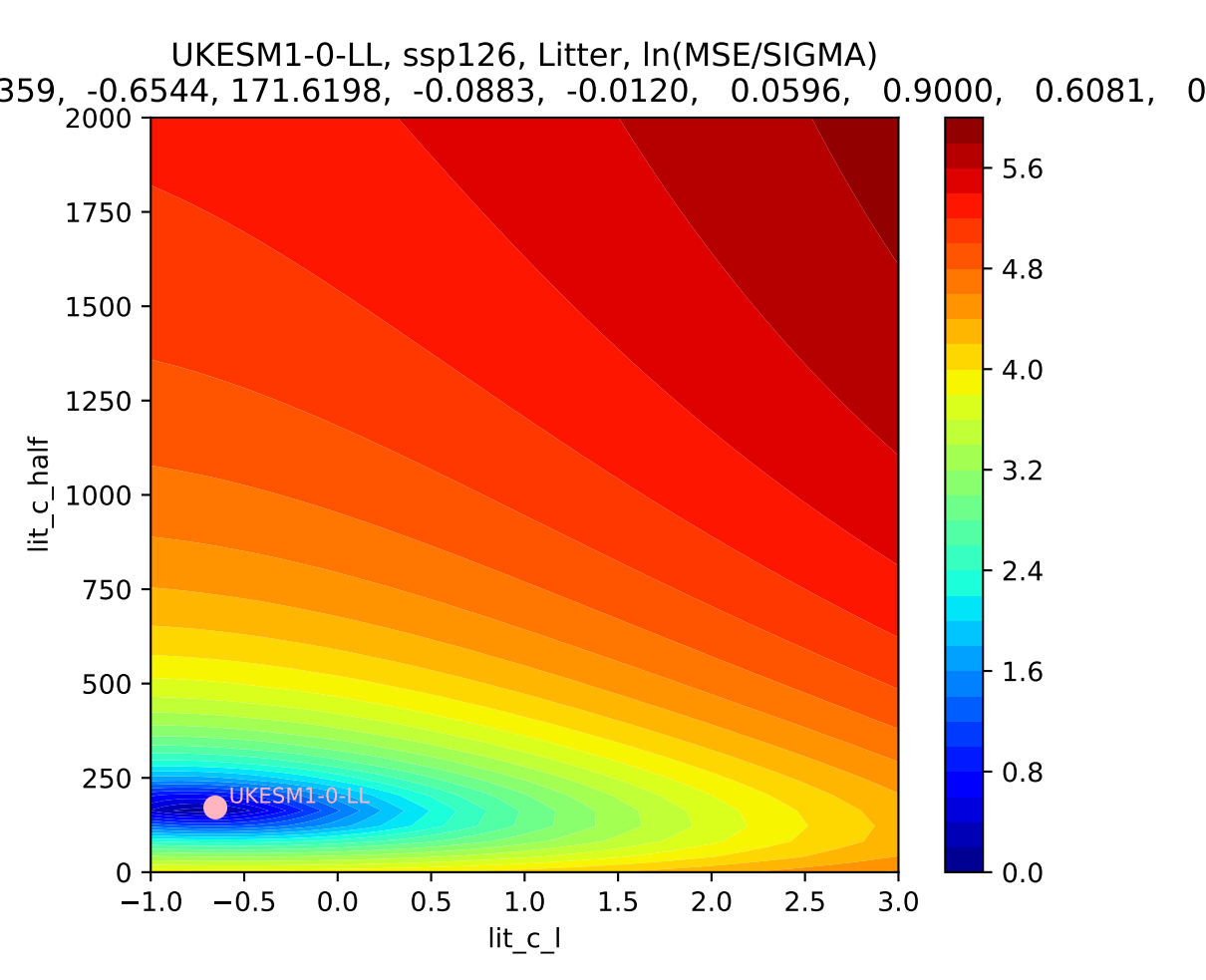

UKESM1-0-LL, ssp126, Litter
ESM
Fit
Litter
ΔT

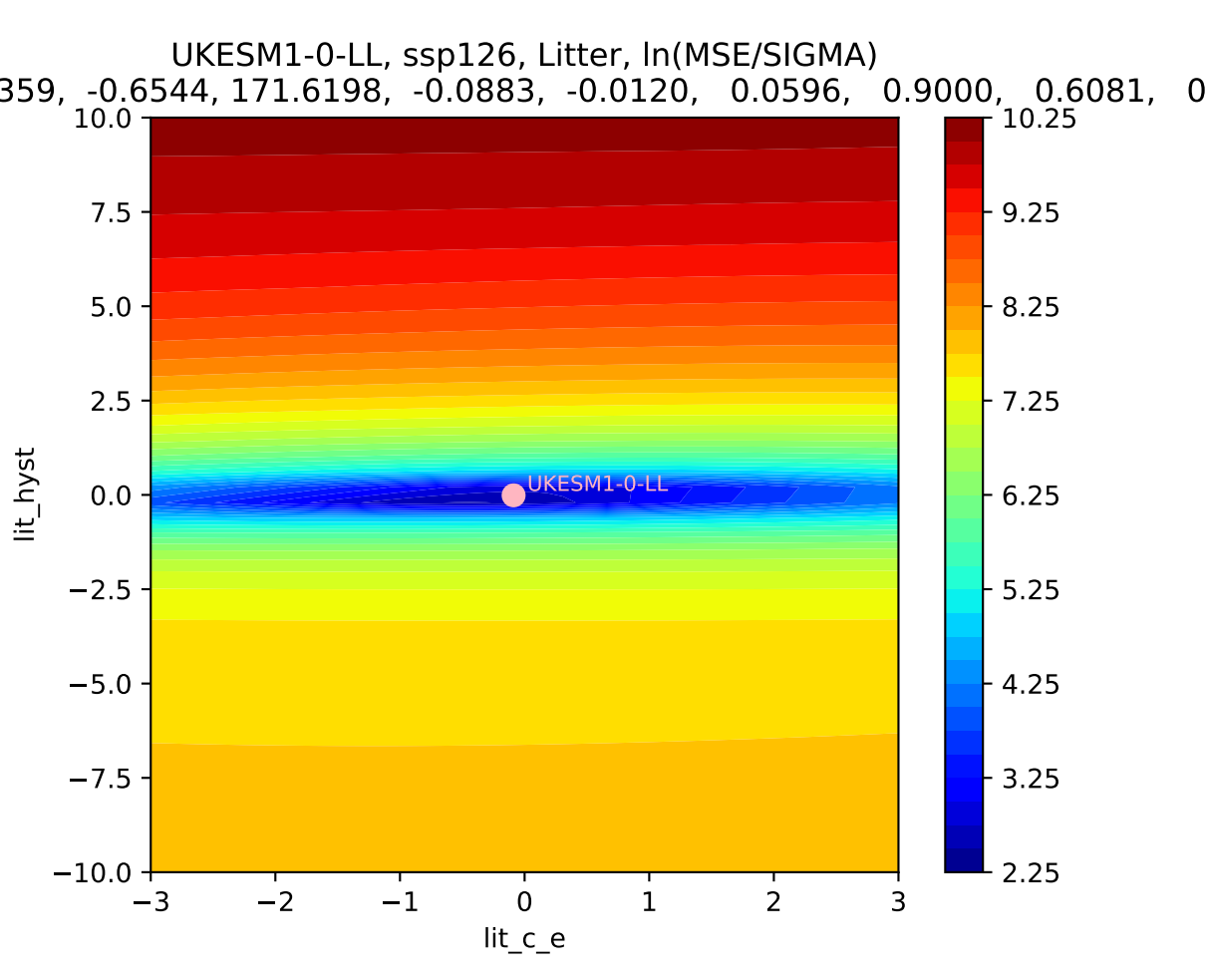

UKESM1-0-LL, ssp126, Litter
ESM-Fit
Litter, ESM - FIT
ΔT

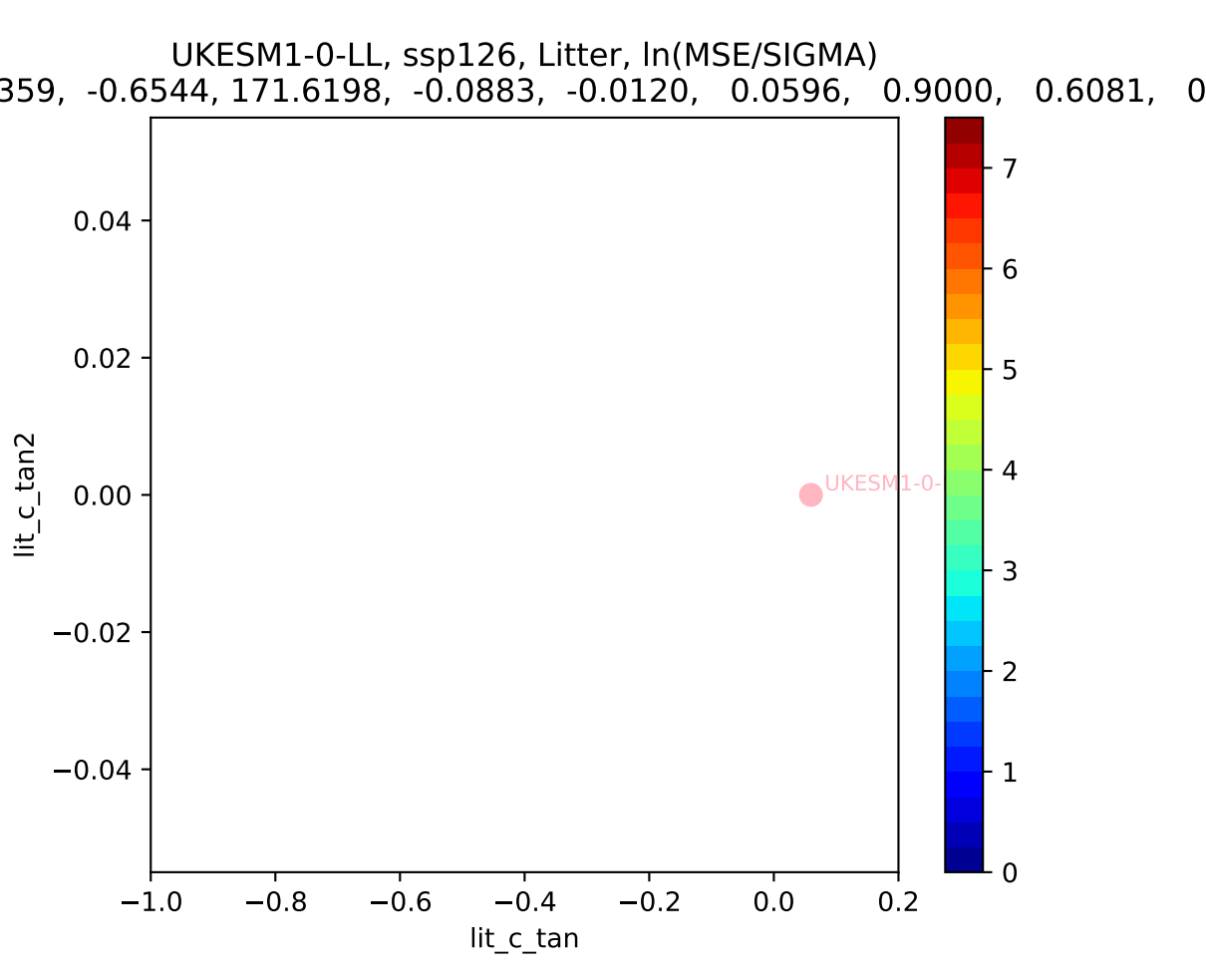

UKESM1-0-LL, ssp126, Litter
ESM
Fit
Litter
c_atm

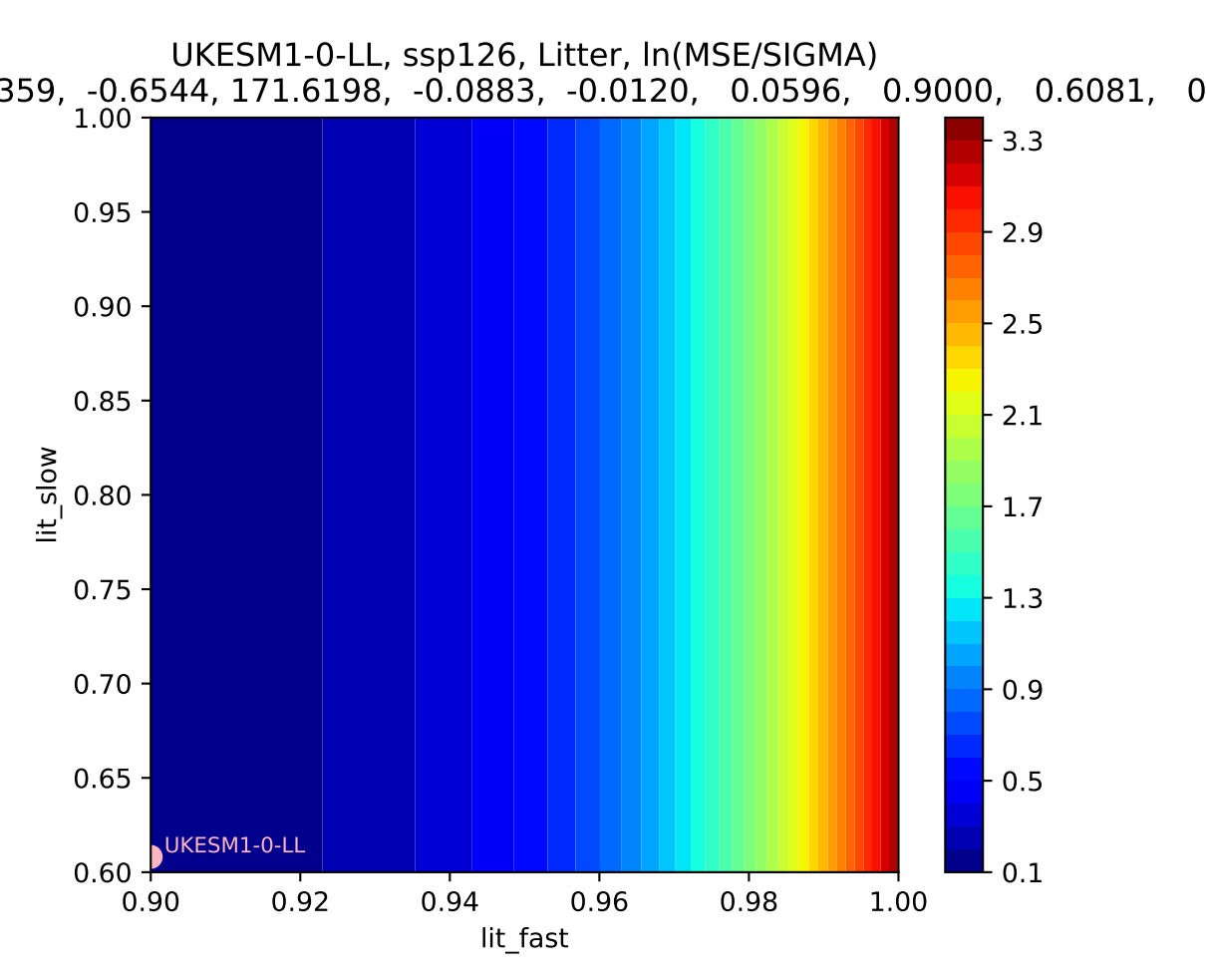

UKESM1-0-LL, ssp126, Litter
ESM-Fit
Litter, ESM - FIT
c_atm

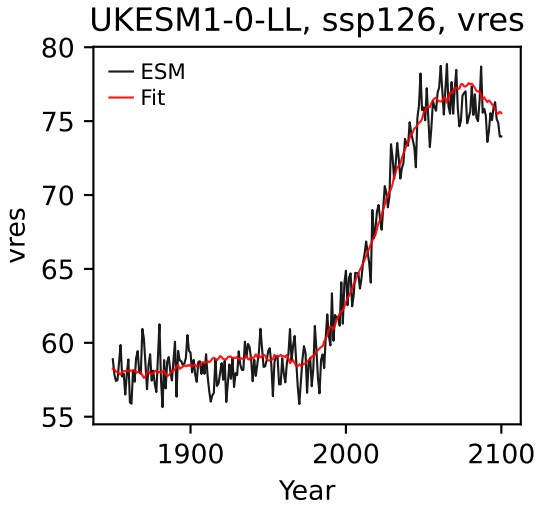

UKESM1-0-LL, ssp126, Litter, ln(MSE/SIGMA)
359, -0.6544, 171.6198, -0.0883, -0.0120, 0.0596, 0.9000, 0.6081, 0
UKESM1-0-LL
lit_t_e
lit_t_l
5
4
3
2
1
0
−1
−2
−3
−3
−2
−1
0
1
2
3
4
5
9.9
9.0
8.1
7.2
6.3
5.4
4.5
3.6
2.7
1.8

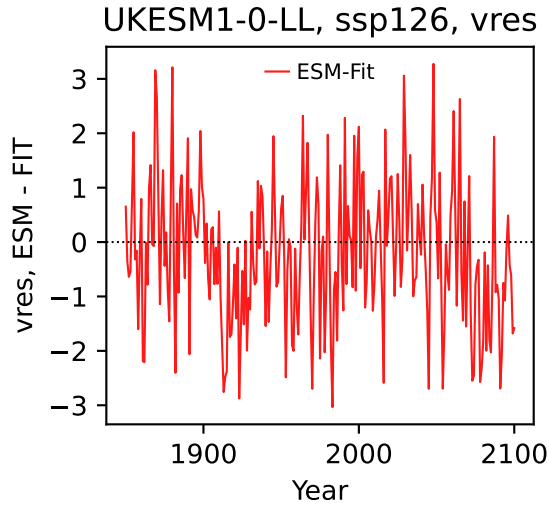

UKESM1-0-LL, ssp126, Litter, ln(MSE/SIGMA)
359, -0.6544, 171.6198, -0.0883, -0.0120, 0.0596, 0.9000, 0.6081, 0
lit_c_half
lit_c_l
UKESM1-0-LL
2000
1750
1500
1250
1000
750
500
250
0
−1.0
−0.5
0.0
0.5
1.0
1.5
2.0
2.5
3.0
5.6
4.8
4.0
3.2
2.4
1.6
0.8
0.0

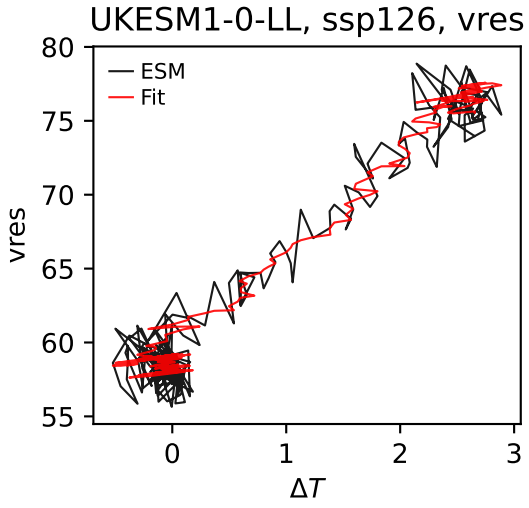

UKESM1-0-LL, ssp126, Litter, ln(MSE/SIGMA)
359, -0.6544, 171.6198, -0.0883, -0.0120, 0.0596, 0.9000, 0.6081, 0
10.0
7.5
5.0
2.5
0.0
−2.5
−5.0
−7.5
−10.0
lit_hyst
UKESM1-0-LL
−3
−2
−1
0
1
2
3
lit_c_e
10.25
9.25
8.25
7.25
6.25
5.25
4.25
3.25
2.25

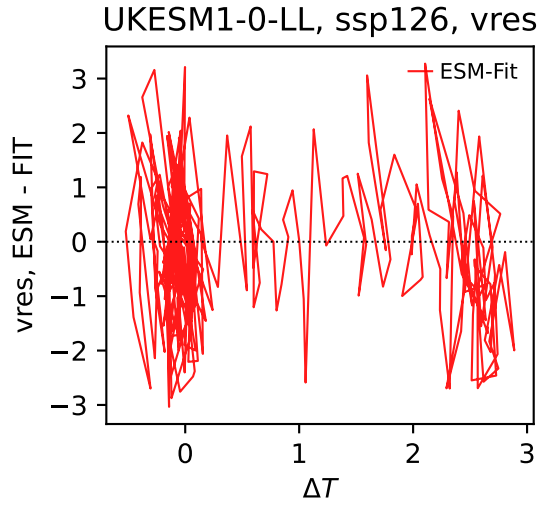

UKESM1-0-LL, ssp126, Litter, ln(MSE/SIGMA)
359, -0.6544, 171.6198, -0.0883, -0.0120, 0.0596, 0.9000, 0.6081, 0
lit_c_tan2
lit_c_tan
0.04
0.02
0.00
−0.02
−0.04
−1.0
−0.8
−0.6
−0.4
−0.2
0.0
0.2
UKESM1-0-
7
6
5
4
3
2
1
0

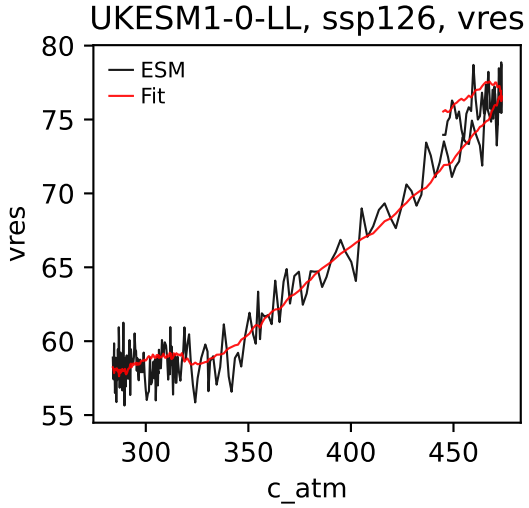

UKESM1-0-LL, ssp126, Litter, ln(MSE/SIGMA)
359, -0.6544, 171.6198, -0.0883, -0.0120, 0.0596, 0.9000, 0.6081, 0
lit_slow
lit_fast
UKESM1-0-LL
1.00
0.95
0.90
0.85
0.80
0.75
0.70
0.65
0.60
0.90
0.92
0.94
0.96
0.98
1.00
3.3
2.9
2.5
2.1
1.7
1.3
0.9
0.5
0.1

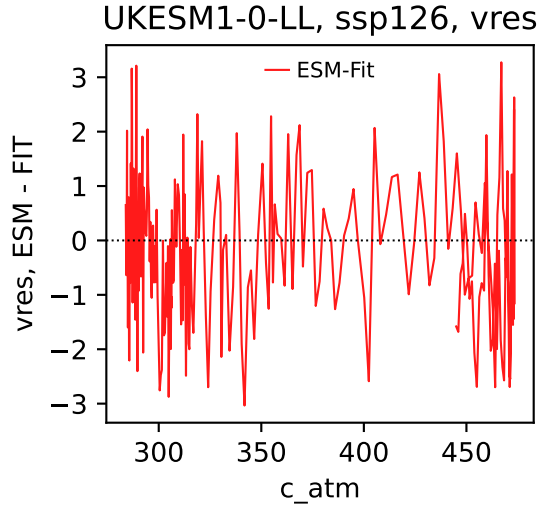

UKESM1-0-LL, ssp126, vres
ESM
Fit
vres
Year

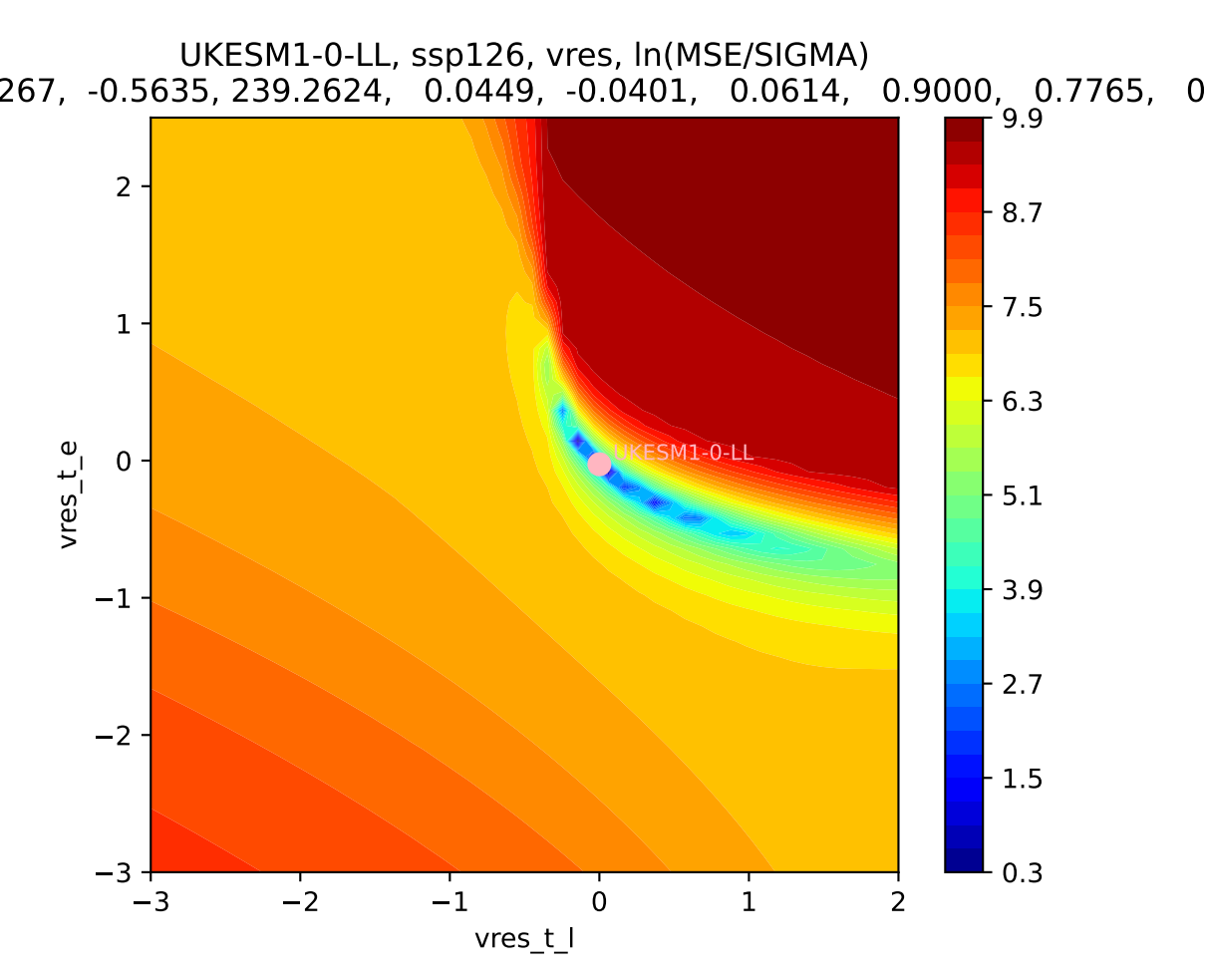

UKESM1-0-LL, ssp126, vres
ESM-Fit
vres, ESM - FIT
Year

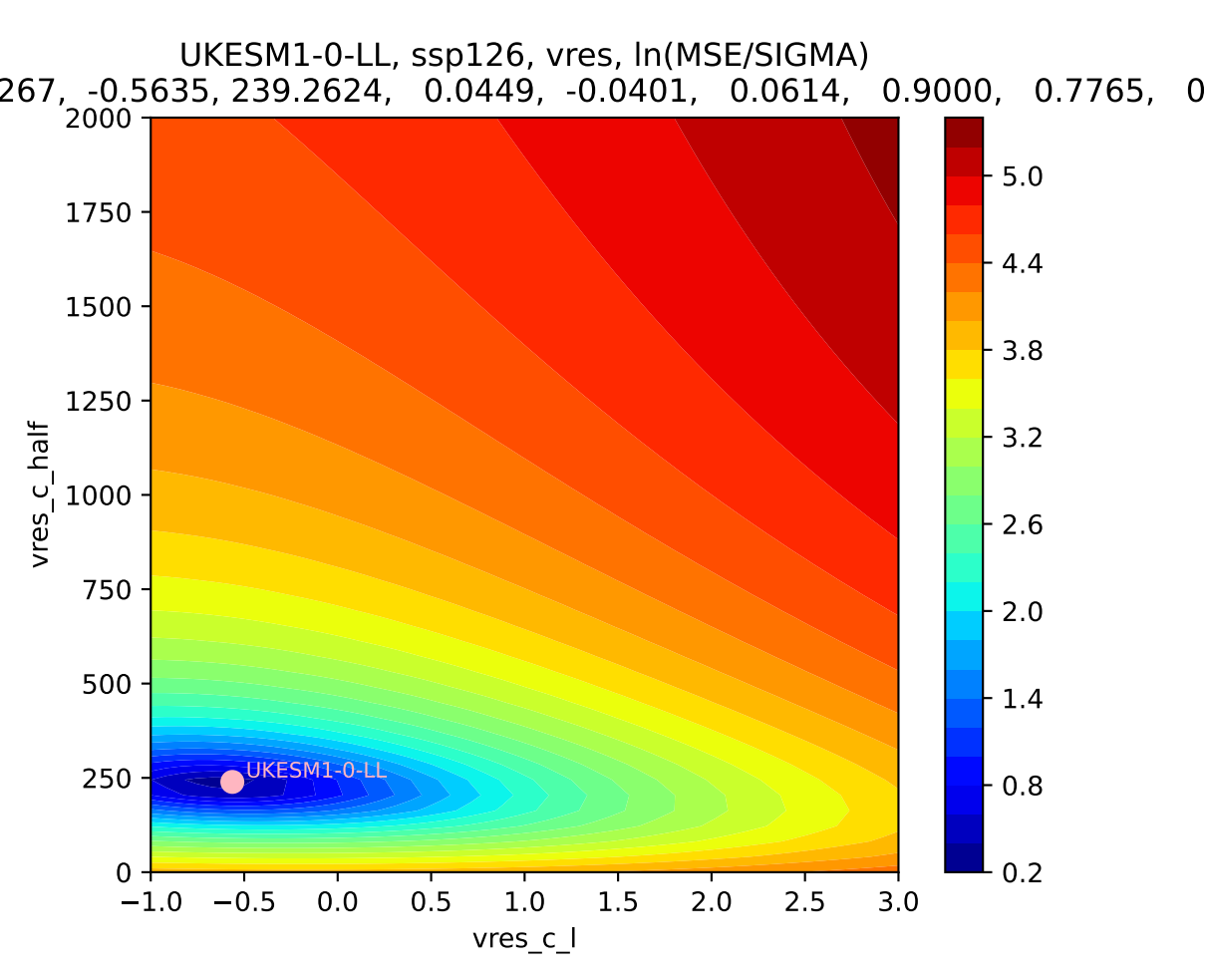

UKESM1-0-LL, ssp126, vres
ESM
Fit
vres
ΔT

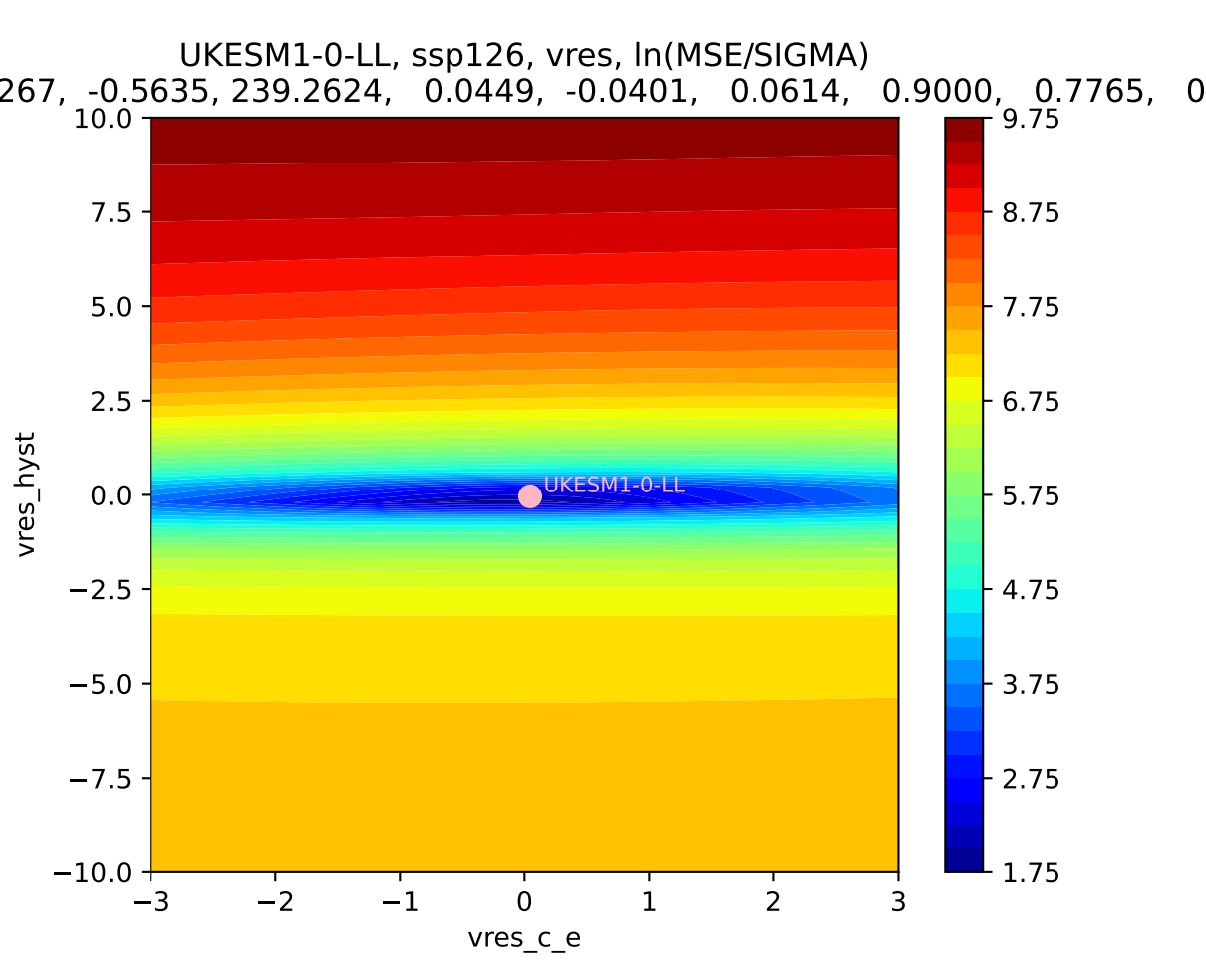

UKESM1-0-LL, ssp126, vres
ESM-Fit
vres, ESM - FIT
ΔT


UKESM1-0-LL, ssp126, vres
ESM
Fit
vres
c_atm


UKESM1-0-LL, ssp126, vres
ESM-Fit
vres, ESM - FIT
c_atm


UKESM1-0-LL, ssp126, vres, ln(MSE/SIGMA)
267, -0.5635, 239.2624, 0.0449, -0.0401, 0.0614, 0.9000, 0.7765, 0
UKESM1-0-LL
vres_t_e
vres_t_l
−3
−2
−1
0
1
2
9.9
8.7
7.5
6.3
5.1
3.9
2.7
1.5
0.3


UKESM1-0-LL, ssp126, vres, ln(MSE/SIGMA)
267, -0.5635, 239.2624, 0.0449, -0.0401, 0.0614, 0.9000, 0.7765, 0
vres_c_half
vres_c_l
UKESM1-0-LL
2000
1750
1500
1250
1000
750
500
250
0
−1.0
−0.5
0.0
0.5
1.0
1.5
2.0
2.5
3.0
5.0
4.4
3.8
3.2
2.6
2.0
1.4
0.8
0.2


UKESM1-0-LL, ssp126, vres, ln(MSE/SIGMA)
267, -0.5635, 239.2624, 0.0449, -0.0401, 0.0614, 0.9000, 0.7765, 0
UKESM1-0-LL
vres_hyst
vres_c_e
10.0
7.5
5.0
2.5
0.0
−2.5
−5.0
−7.5
−10.0
−3
−2
−1
0
1
2
3
9.75
8.75
7.75
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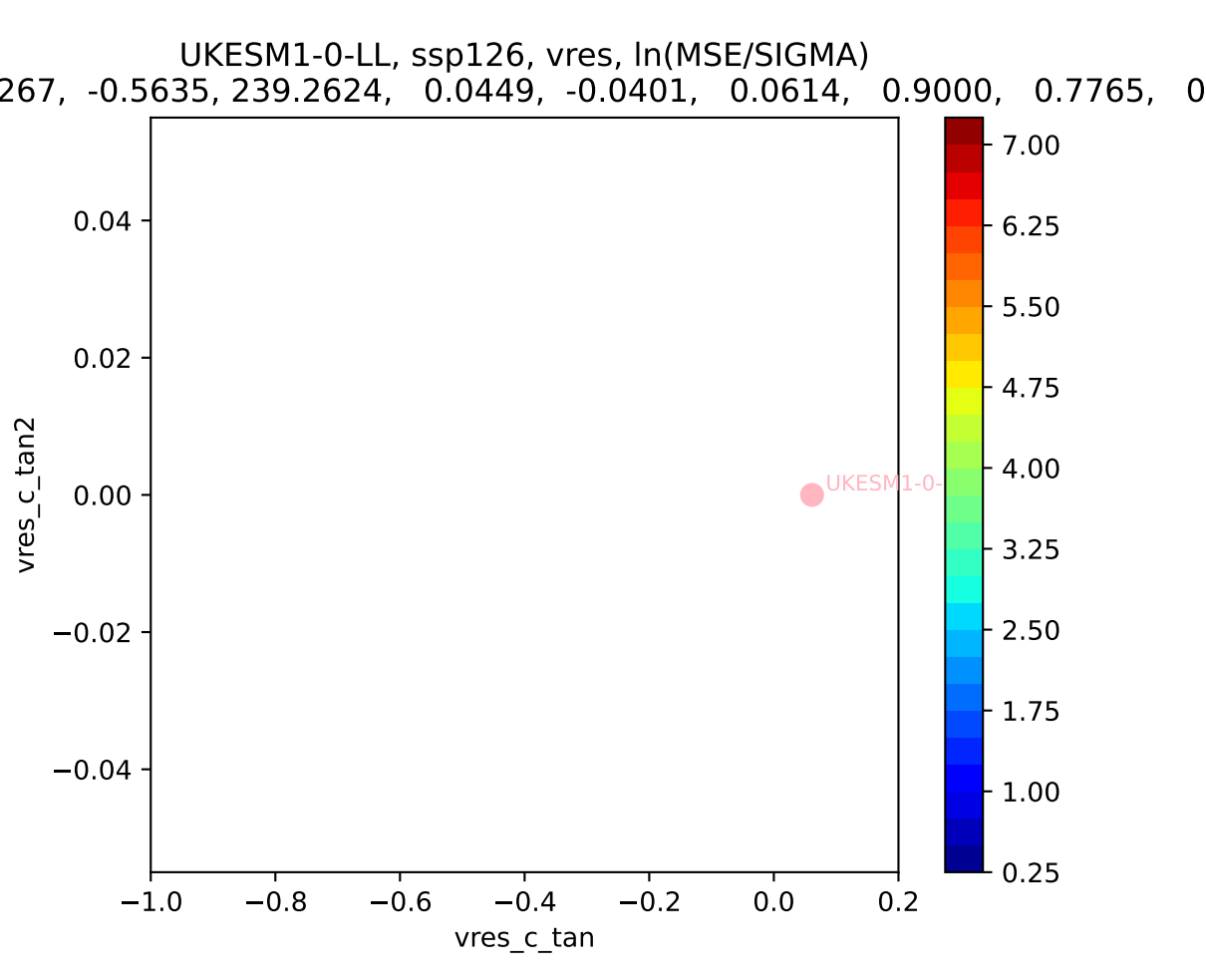
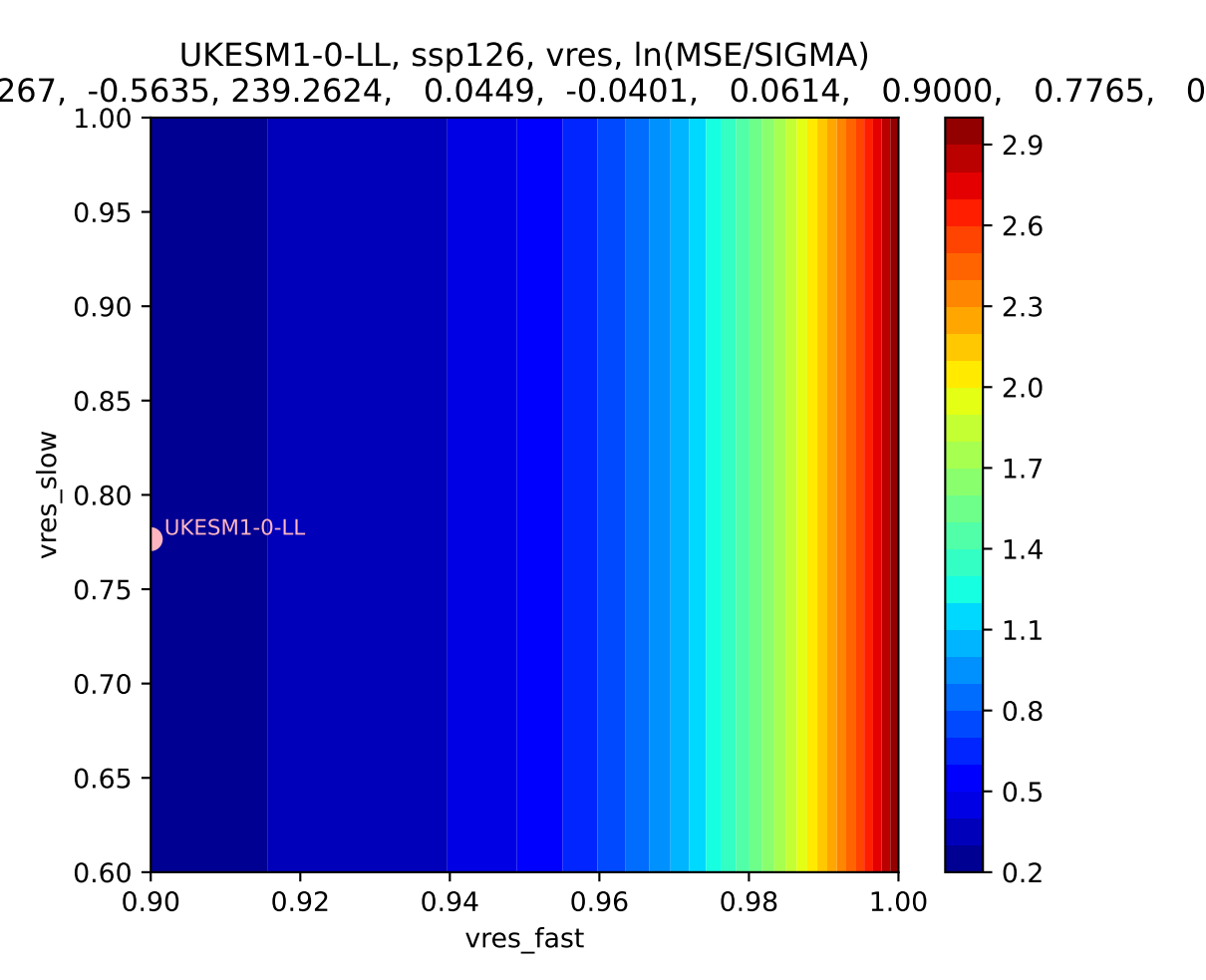
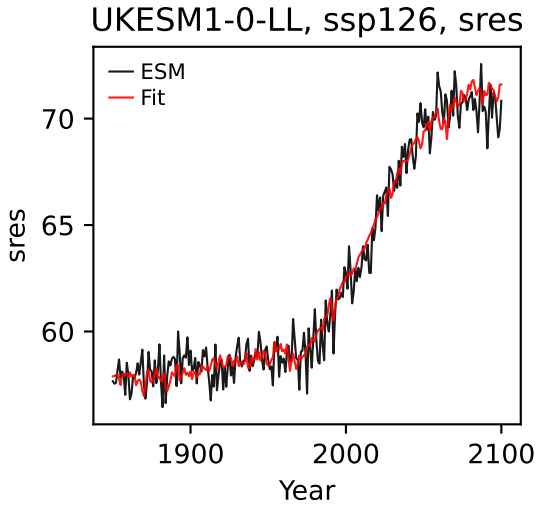
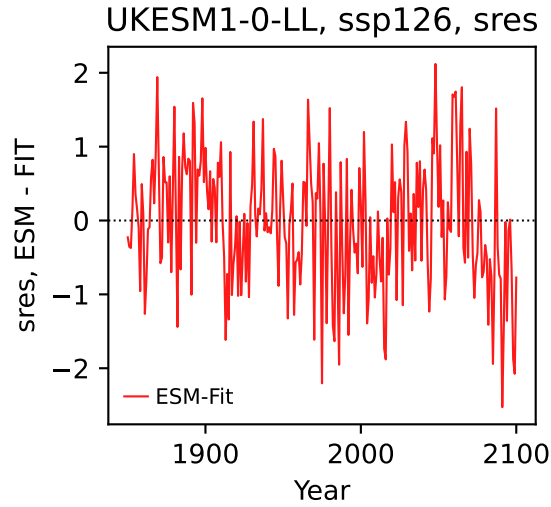
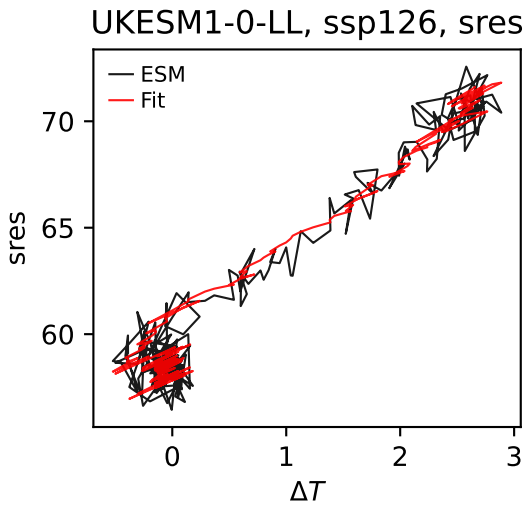
3.75
2.75
1.75

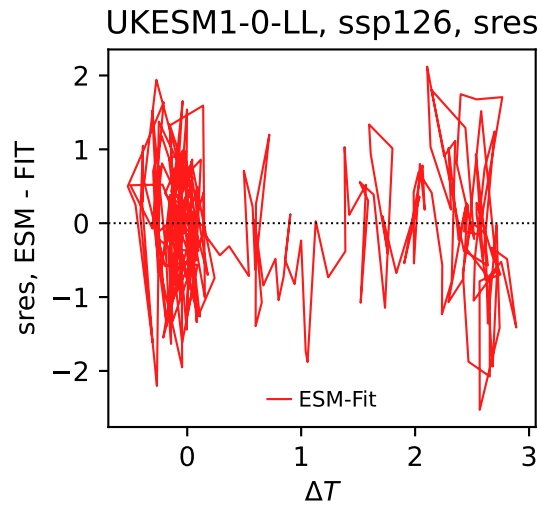

UKESM1-0-LL, ssp126, vres, ln(MSE/SIGMA)
267, -0.5635, 239.2624, 0.0449, -0.0401, 0.0614, 0.9000, 0.7765, 0
UKESM1-0-
vres_c_tan2
vres_c_tan
0.04
0.02
0.00
−0.02
−0.04
−1.0
−0.8
−0.6
−0.4
−0.2
0.0
0.2
7.00
6.25
5.50
4.75
4.00
3.25
2.50
1.75
1.00
0.25

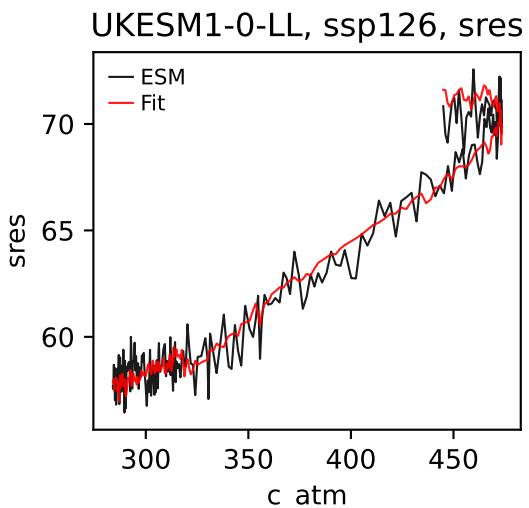

UKESM1-0-LL, ssp126, vres, ln(MSE/SIGMA)
267, -0.5635, 239.2624, 0.0449, -0.0401, 0.0614, 0.9000, 0.7765, 0
1.00
0.95
0.90
0.85
0.80
0.75
0.70
0.65
0.60
vres_slow
UKESM1-0-LL
0.90
0.92
0.94
0.96
0.98
1.00
vres_fast
2.9
2.6
2.3
2.0
1.7
1.4
1.1
0.8
0.5
0.2

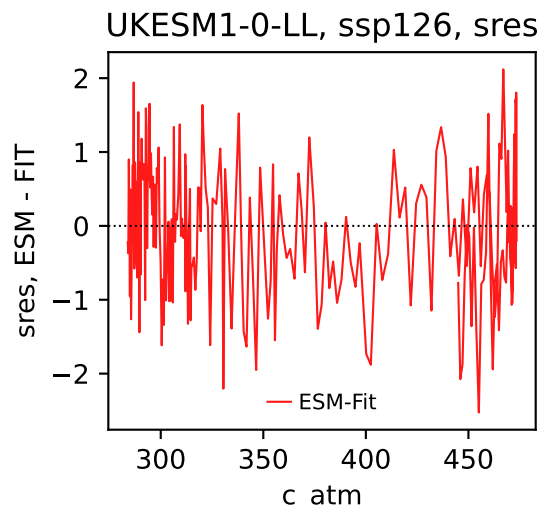

UKESM1-0-LL, ssp126, sres
ESM
Fit
sres
70
65
60
1900
2000
2100
Year

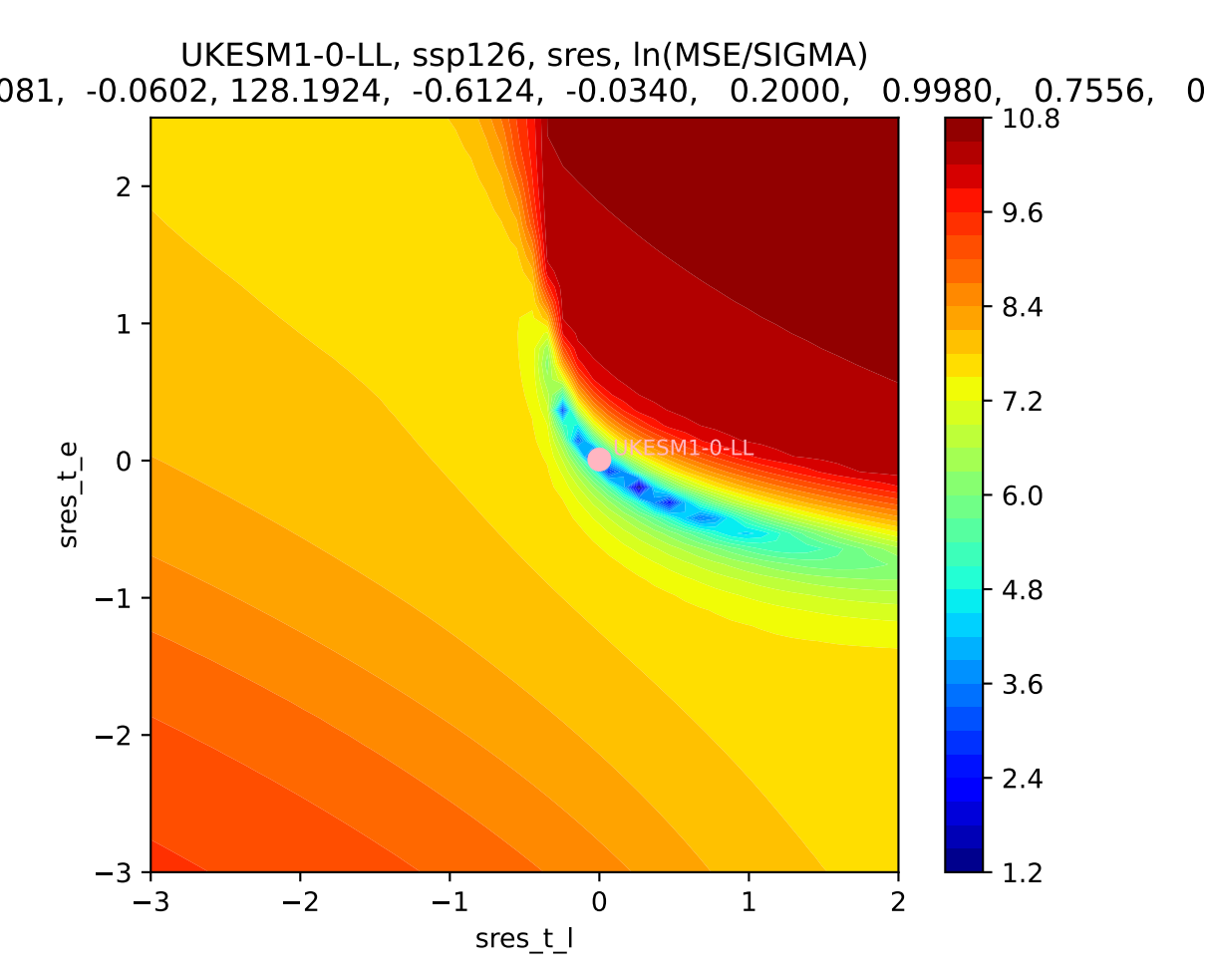

UKESM1-0-LL, ssp126, sres
sres, ESM - FIT
2
1
0
−1
−2
ESM-Fit
1900
2000
2100
Year

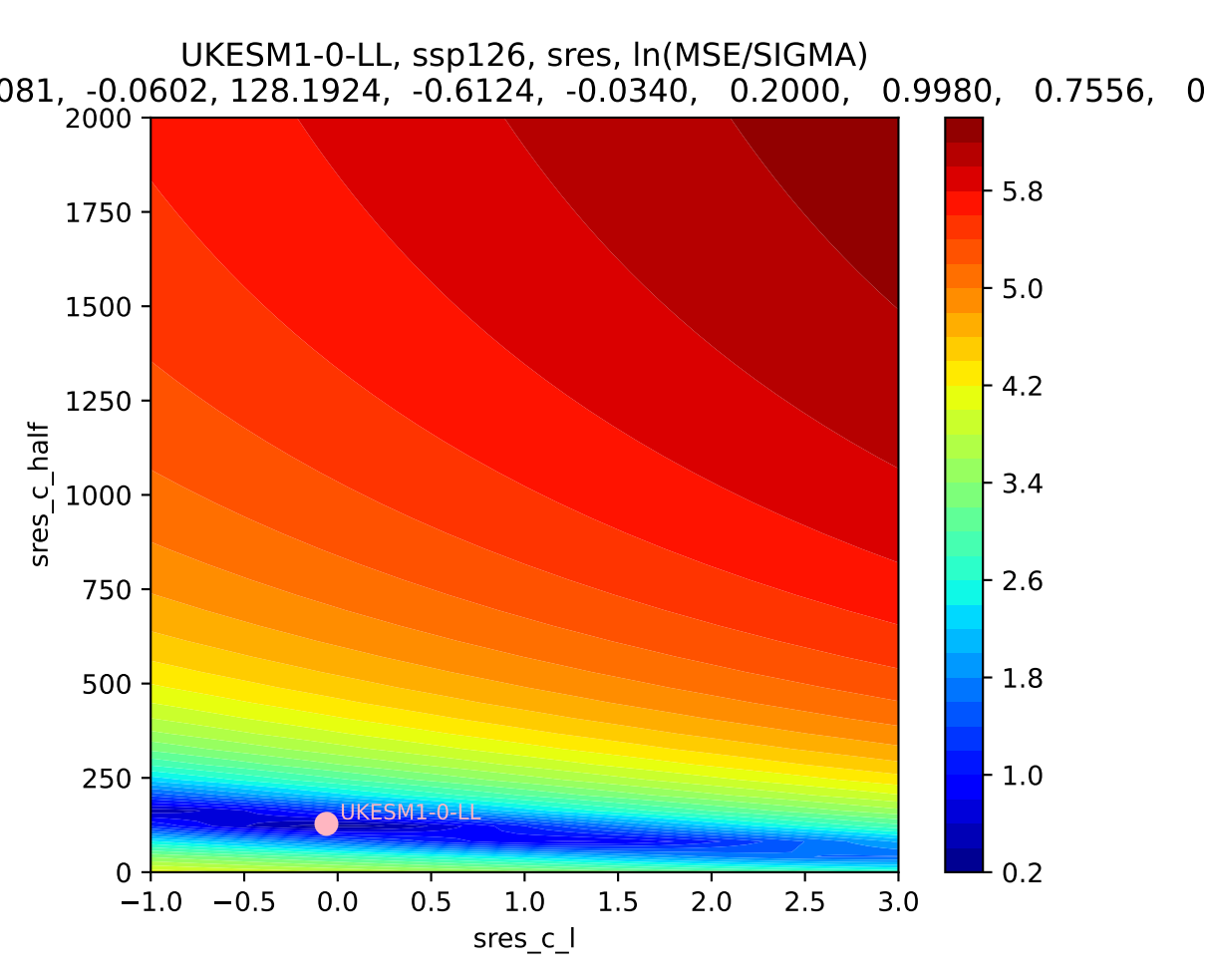

UKESM1-0-LL, ssp126, sres
ESM
Fit
sres
70
65
60
0
1
2
3
ΔT

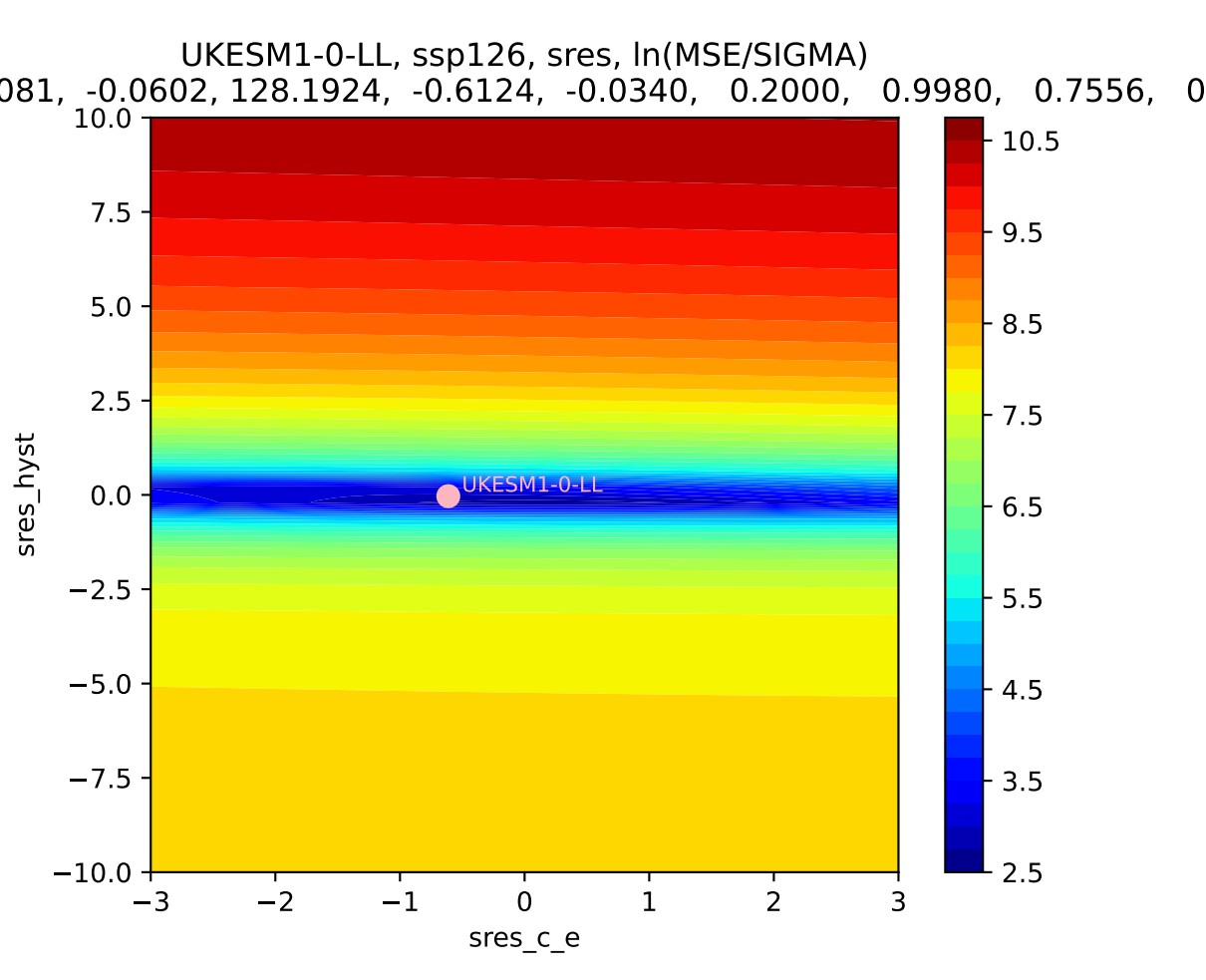

UKESM1-0-LL, ssp126, sres
sres, ESM - FIT
2
1
0
−1
−2
ESM-Fit
0
1
2
3
ΔT


UKESM1-0-LL, ssp126, sres
ESM
Fit
sres
70
65
60
300
350
400
450
c_atm


UKESM1-0-LL, ssp126, sres
sres, ESM - FIT
2
1
0
−1
−2
ESM-Fit
300
350
400
450
c_atm


UKESM1-0-LL, ssp126, sres, ln(MSE/SIGMA)
081, -0.0602, 128.1924, -0.6124, -0.0340, 0.2000, 0.9980, 0.7556, 0
UKESM1-0-LL
sres_t_e
sres_t_l
−3
−2
−1
0
1
2
10.8
9.6
8.4
7.2
6.0
4.8
3.6
2.4
1.2


UKESM1-0-LL, ssp126, sres, ln(MSE/SIGMA)
081, -0.0602, 128.1924, -0.6124, -0.0340, 0.2000, 0.9980, 0.7556, 0
sres_c_half
sres_c_l
UKESM1-0-LL
2000
1750
1500
1250
1000
750
500
250
0
−1.0
−0.5
0.0
0.5
1.0
1.5
2.0
2.5
3.0
5.8
5.0
4.2
3.4
2.6
1.8
1.0
0.2


UKESM1-0-LL, ssp126, sres, ln(MSE/SIGMA)
081, -0.0602, 128.1924, -0.6124, -0.0340, 0.2000, 0.9980, 0.7556, 0
UKESM1-0-LL
sres_hyst
sres_c_e
10.0
7.5
5.0
2.5
0.0
−2.5
−5.0
−7.5
−10.0
−3
−2
−1
0
1
2
3
10.5
9.5
8.5
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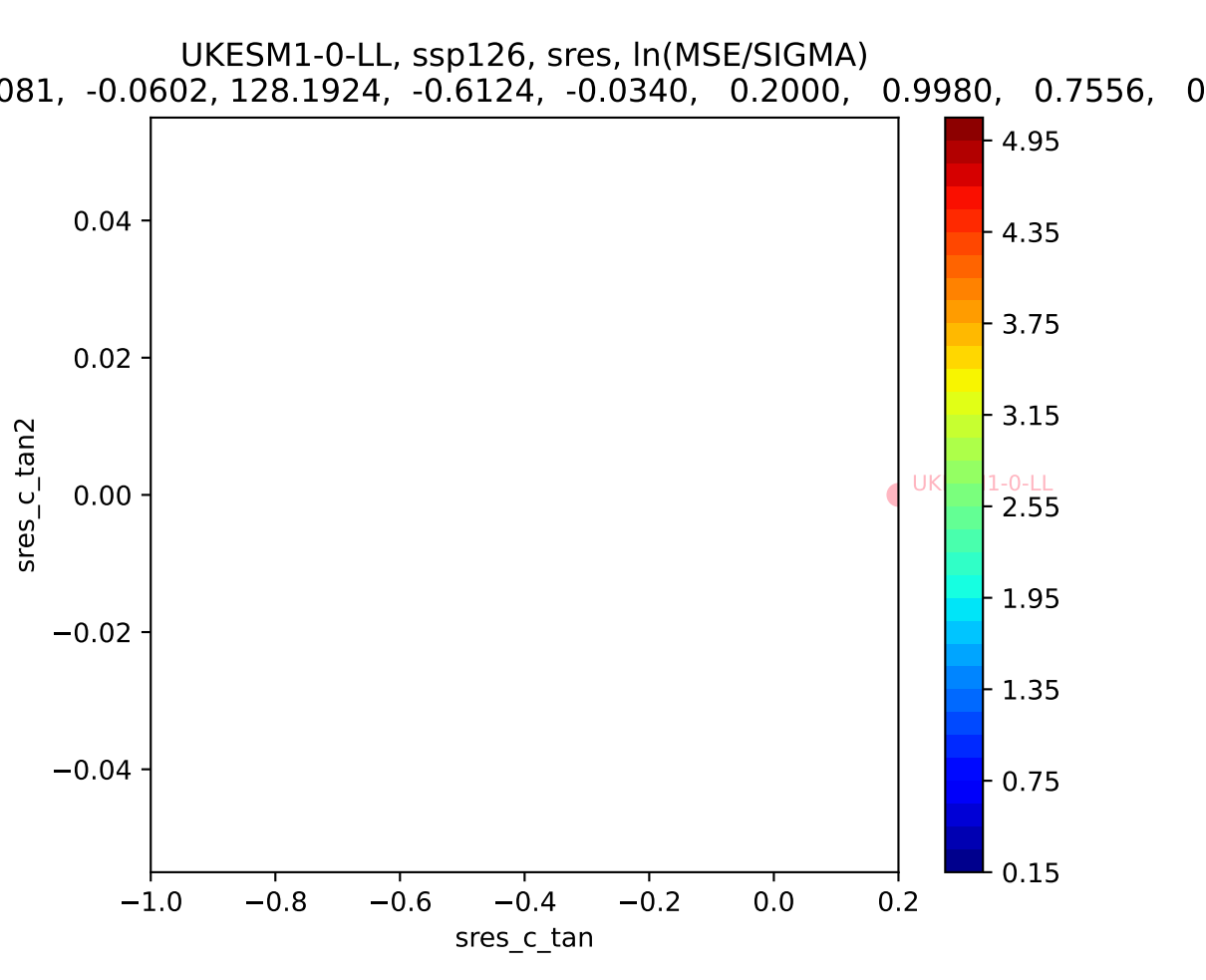
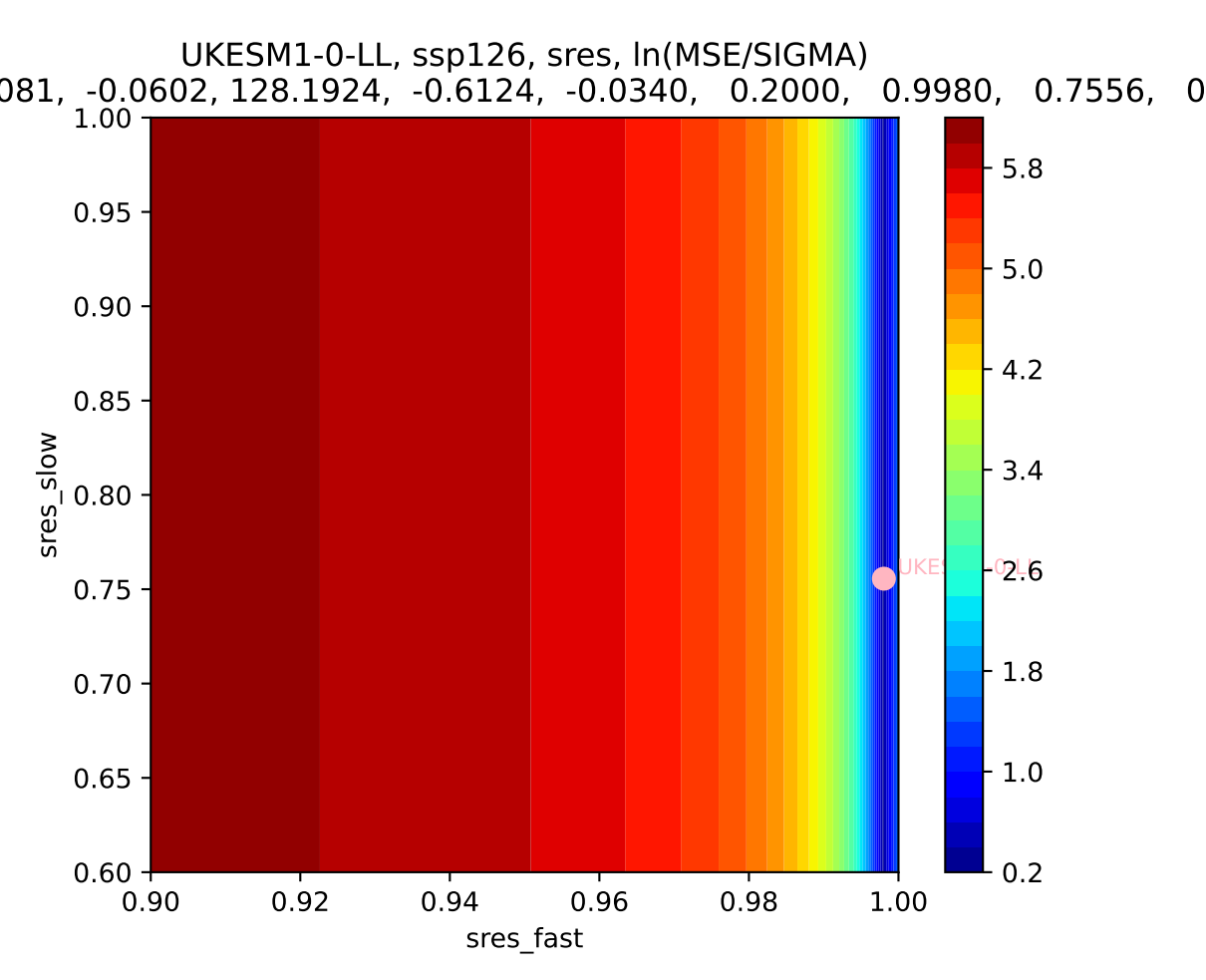
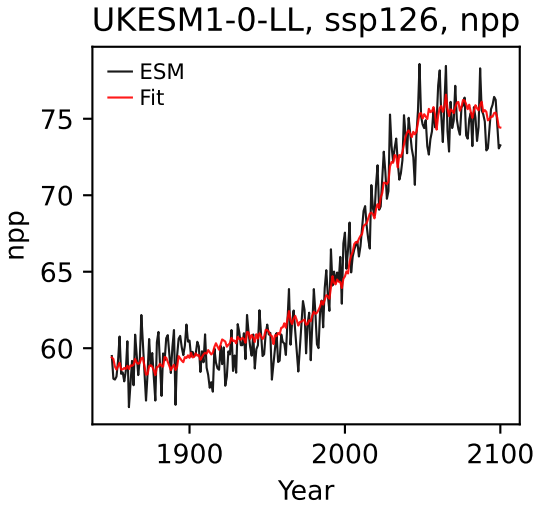
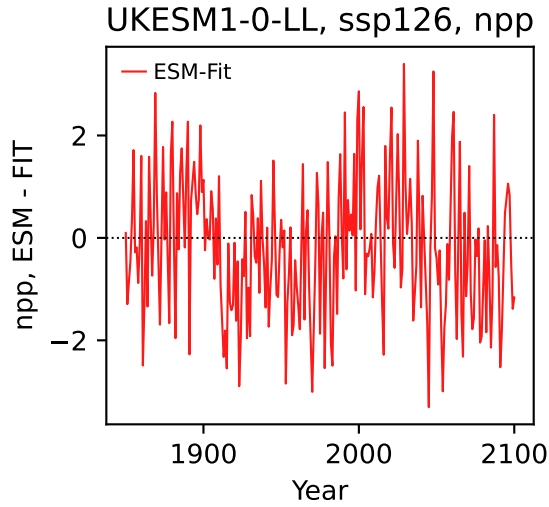
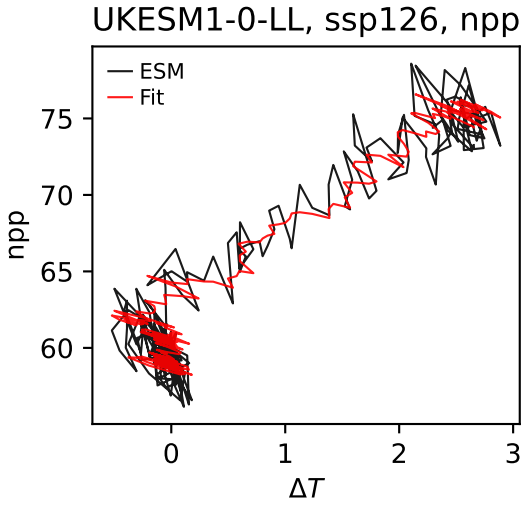
4.5
3.5
2.5

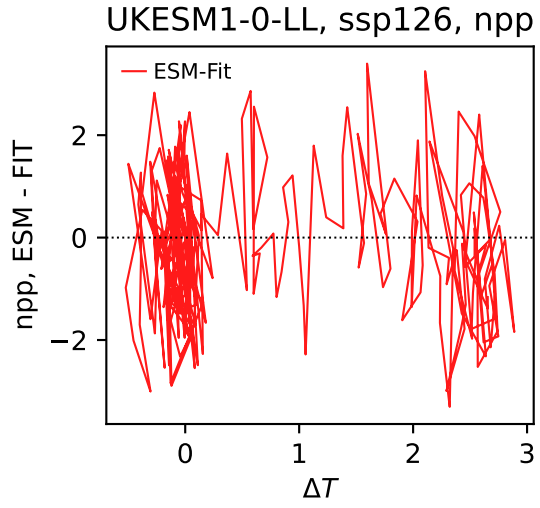

UKESM1-0-LL, ssp126, sres, ln(MSE/SIGMA)
081, -0.0602, 128.1924, -0.6124, -0.0340, 0.2000, 0.9980, 0.7556, 0
0.04
0.02
0.00
−0.02
−0.04
sres_c_tan2
−1.0
−0.8
−0.6
−0.4
−0.2
0.0
0.2
sres_c_tan
4.95
4.35
3.75
3.15
2.55
1.95
1.35
0.75
0.15

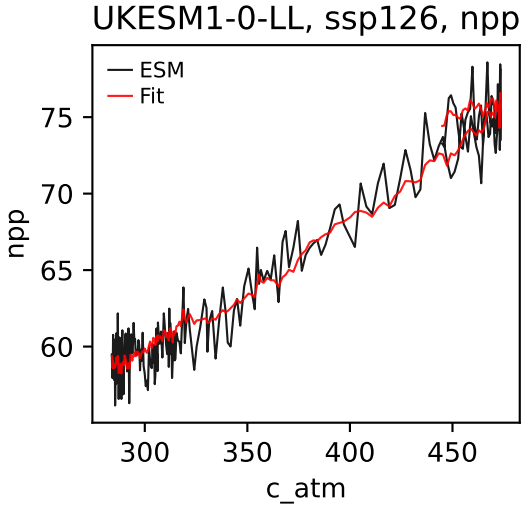

UKESM1-0-LL, ssp126, sres, ln(MSE/SIGMA)
081, -0.0602, 128.1924, -0.6124, -0.0340, 0.2000, 0.9980, 0.7556, 0
1.00
0.95
0.90
0.85
0.80
0.75
0.70
0.65
0.60
sres_slow
0.90
0.92
0.94
0.96
0.98
1.00
sres_fast
5.8
5.0
4.2
3.4
2.6
1.8
1.0
0.2

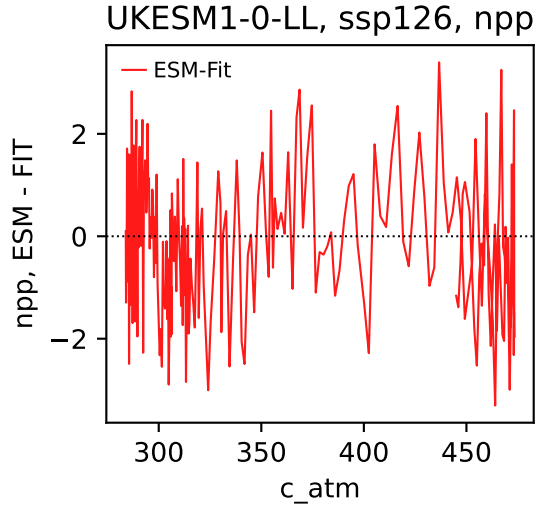

UKESM1-0-LL, ssp126, npp
ESM
Fit
npp
Year

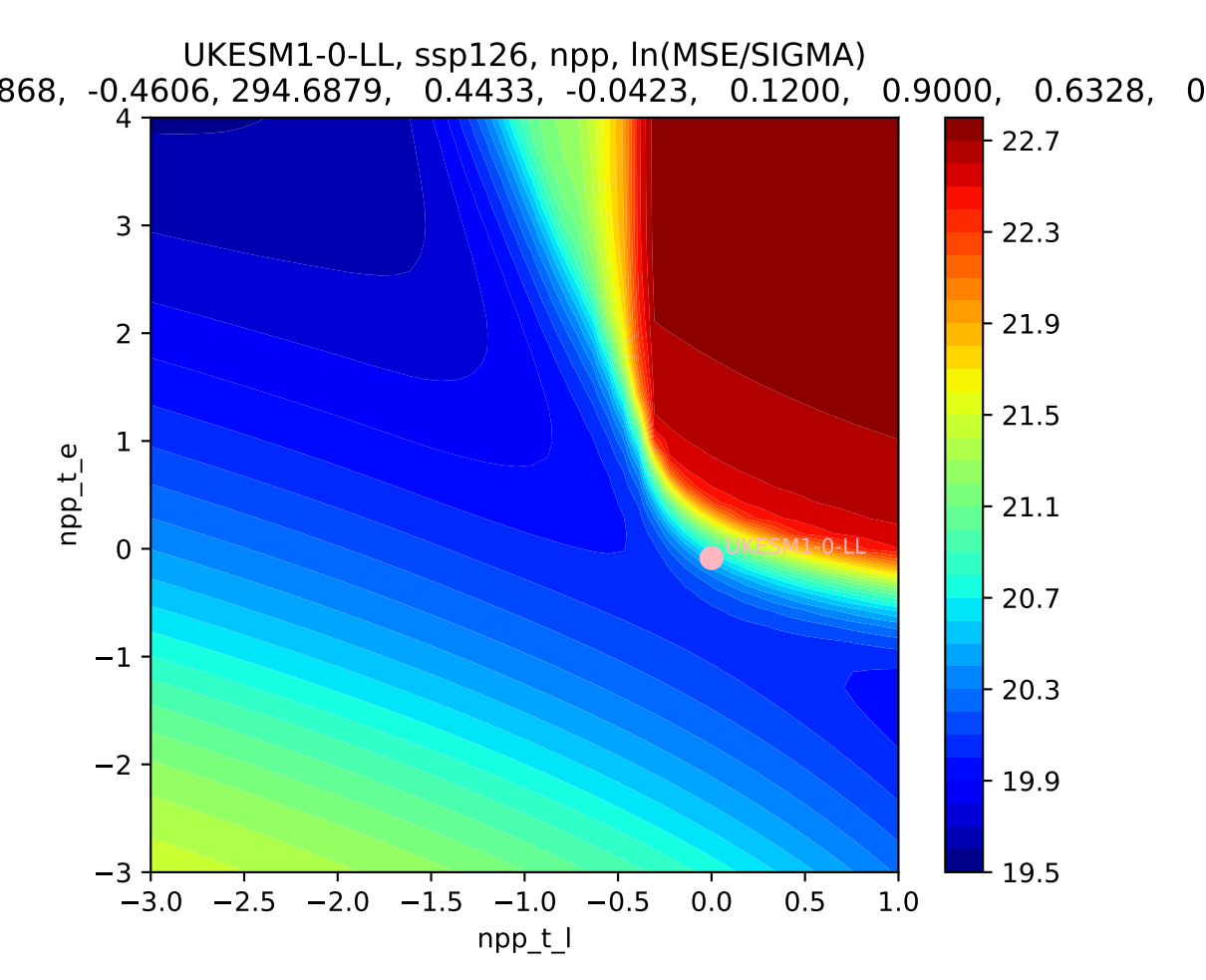

UKESM1-0-LL, ssp126, npp
ESM-Fit
npp, ESM - FIT
Year

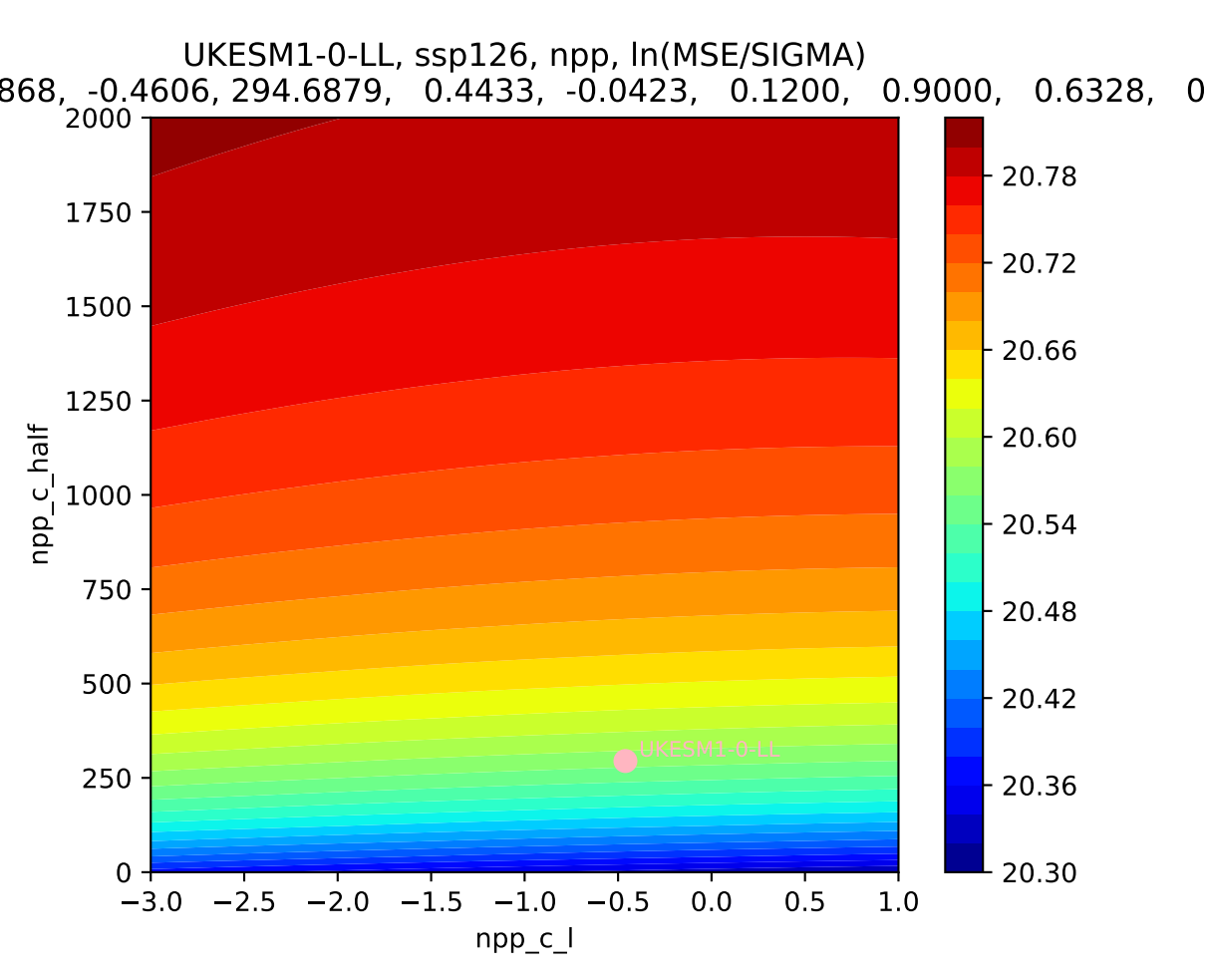

UKESM1-0-LL, ssp126, npp
ESM
Fit
npp
ΔT

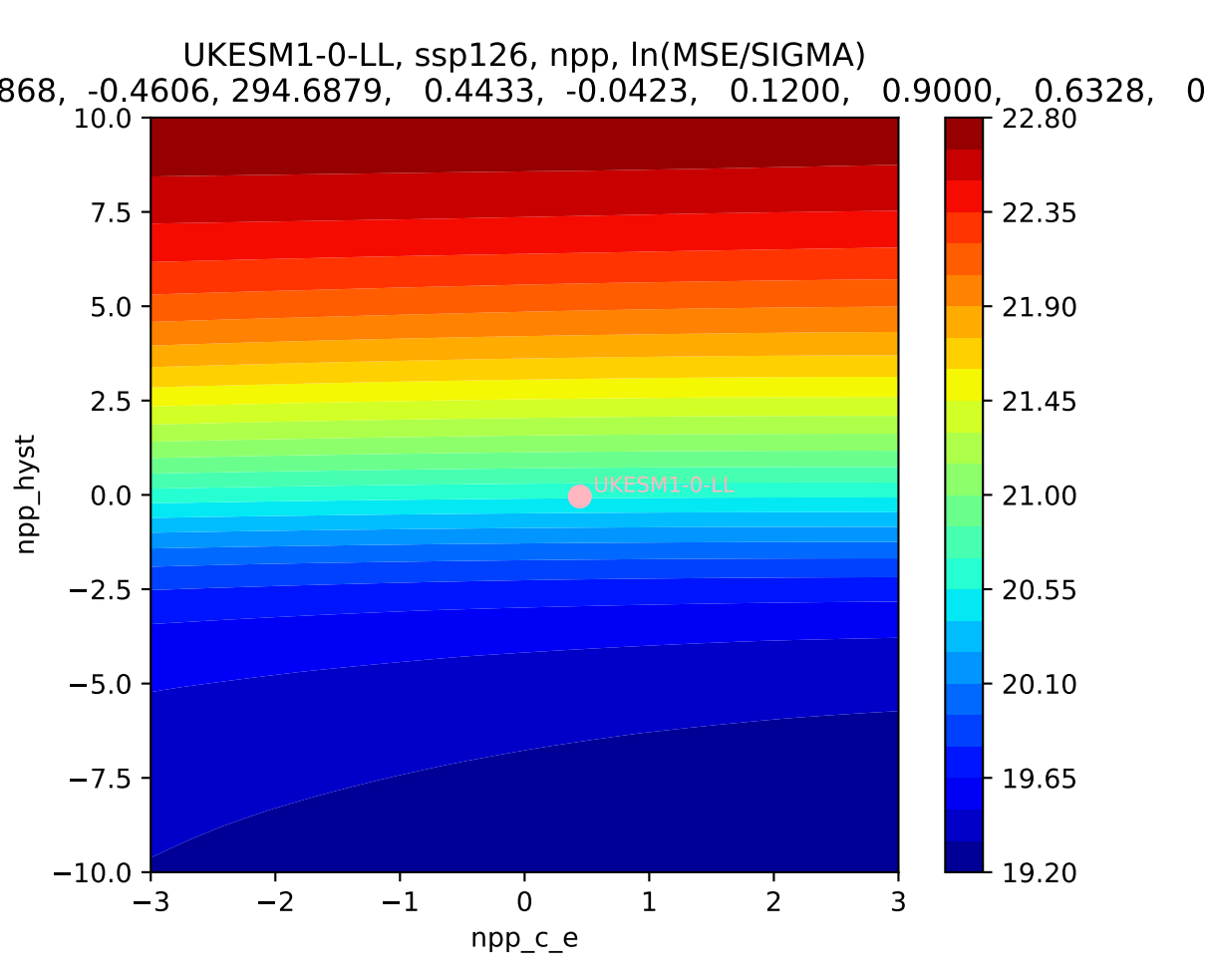

UKESM1-0-LL, ssp126, npp
ESM-Fit
npp, ESM - FIT
ΔT


UKESM1-0-LL, ssp126, npp
ESM
Fit
npp
c_atm


UKESM1-0-LL, ssp126, npp
ESM-Fit
npp, ESM - FIT
c_atm


UKESM1-0-LL, ssp126, npp, ln(MSE/SIGMA)
868, -0.4606, 294.6879, 0.4433, -0.0423, 0.1200, 0.9000, 0.6328, 0
UKESM1-0-LL
npp_t_e
npp_t_l
4
3
2
1
0
−1
−2
−3
−3.0
−2.5
−2.0
−1.5
−1.0
−0.5
0.0
0.5
1.0
22.7
22.3
21.9
21.5
21.1
20.7
20.3
19.9
19.5


UKESM1-0-LL, ssp126, npp, ln(MSE/SIGMA)
868, -0.4606, 294.6879, 0.4433, -0.0423, 0.1200, 0.9000, 0.6328, 0
2000
1750
1500
1250
1000
750
500
250
0
npp_c_half
−3.0
−2.5
−2.0
−1.5
−1.0
−0.5
0.0
0.5
1.0
npp_c_l
UKESM1-0-LL
20.78
20.72
20.66
20.60
20.54
20.48
20.42
20.36
20.30


UKESM1-0-LL, ssp126, npp, ln(MSE/SIGMA)
868, -0.4606, 294.6879, 0.4433, -0.0423, 0.1200, 0.9000, 0.6328, 0
UKESM1-0-LL
npp_hyst
npp_c_e
10.0
7.5
5.0
2.5
0.0
−2.5
−5.0
−7.5
−10.0
−3
−2
−1
0
1
2
3
22.80
22.35
21.90
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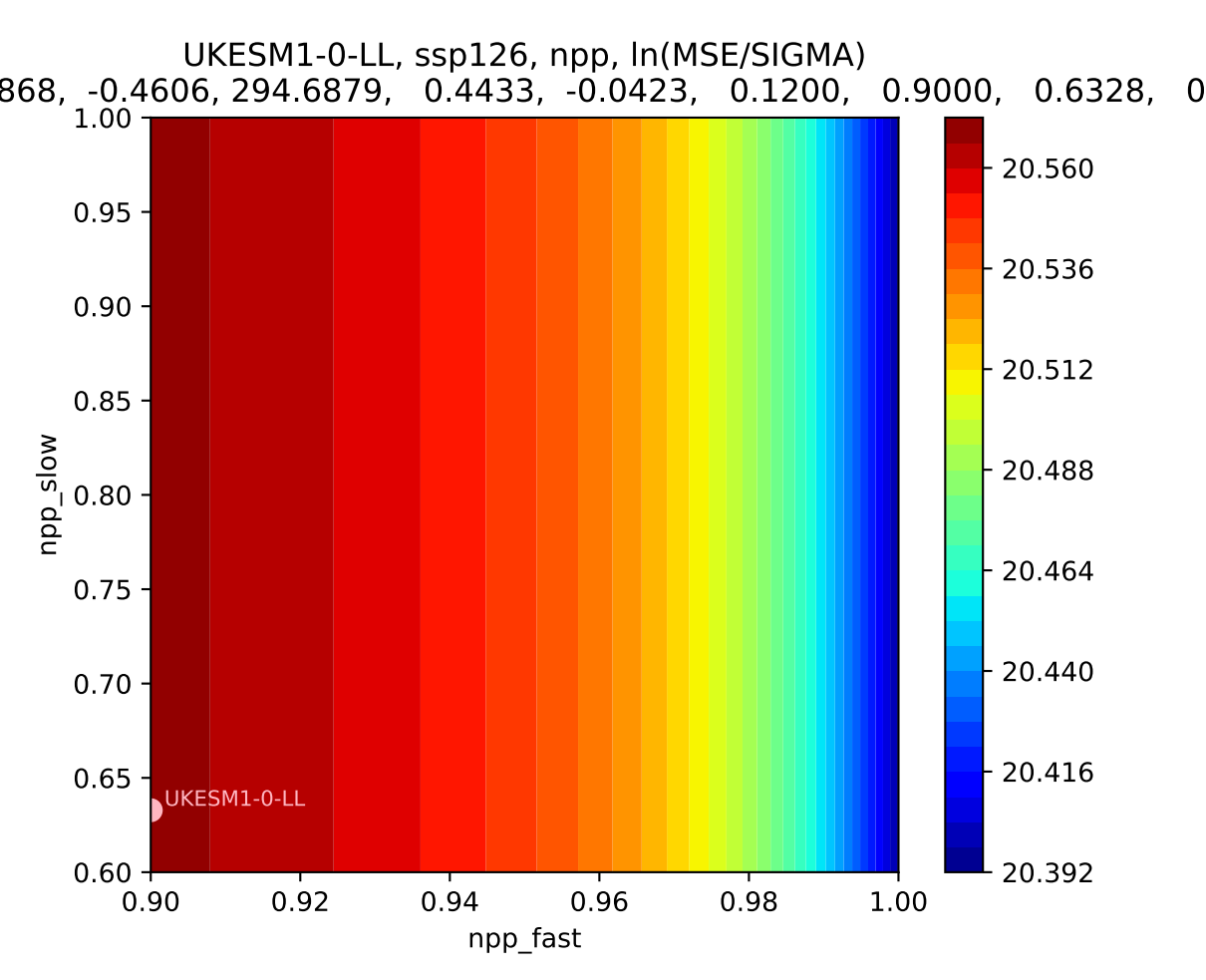
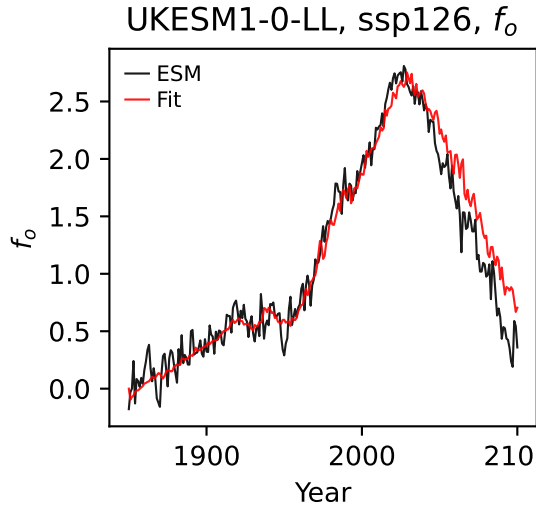
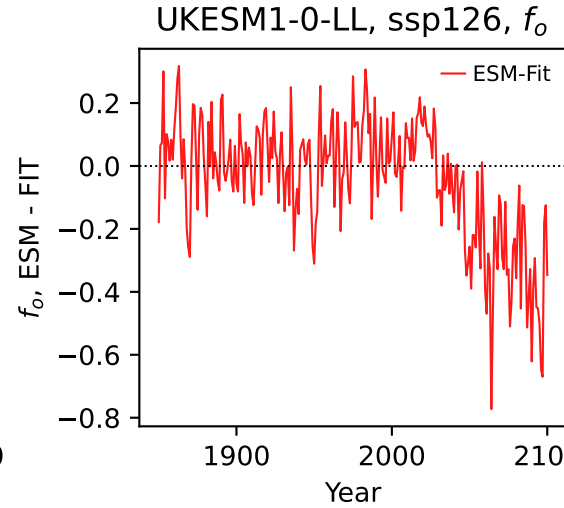
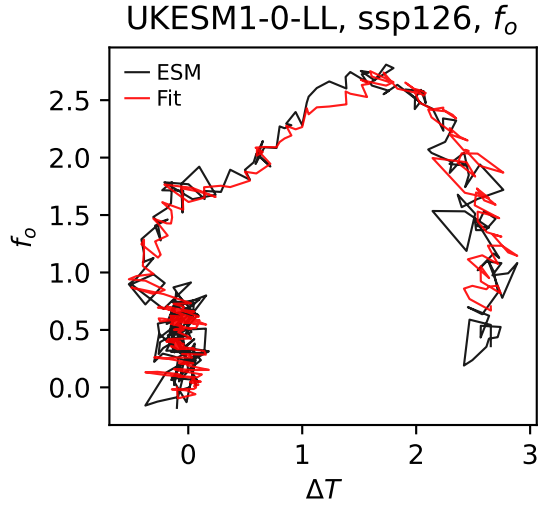
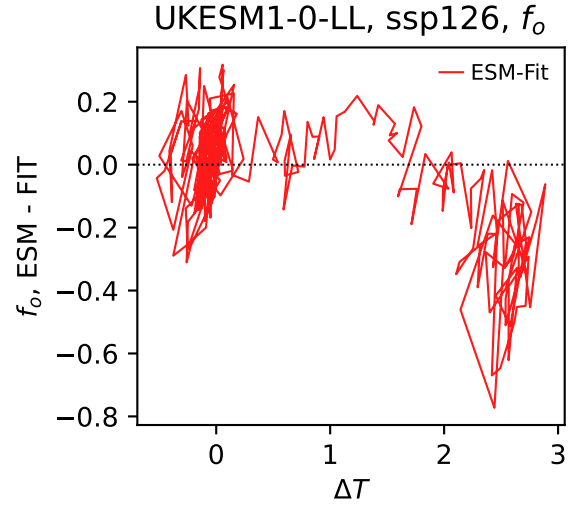
20.10
19.65
19.20

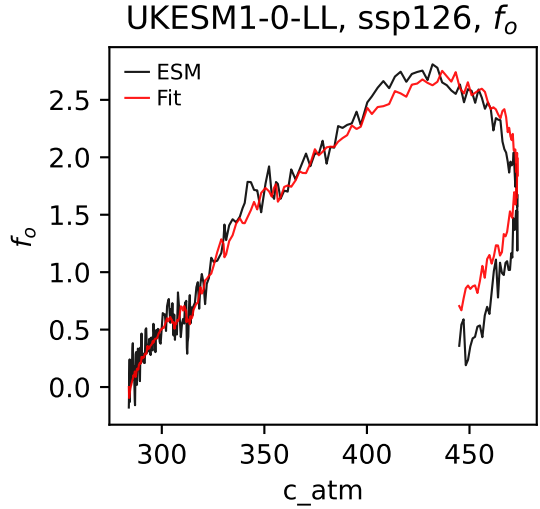

UKESM1-0-LL, ssp126, npp, ln(MSE/SIGMA)
868, -0.4606, 294.6879, 0.4433, -0.0423, 0.1200, 0.9000, 0.6328, 0
1.00
0.95
0.90
0.85
0.80
0.75
0.70
0.65
0.60
npp_slow
UKESM1-0-LL
0.90
0.92
0.94
0.96
0.98
1.00
npp_fast
20.560
20.536
20.512
20.488
20.464
20.440
20.416
20.392

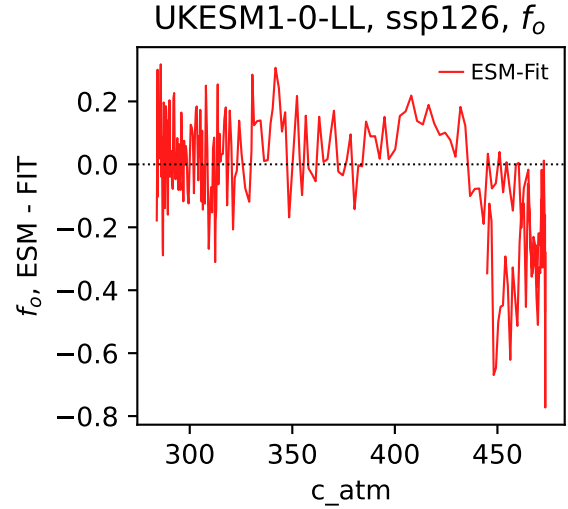

UKESM1-0-LL, ssp126, f_o
ESM
Fit
f_o
Year

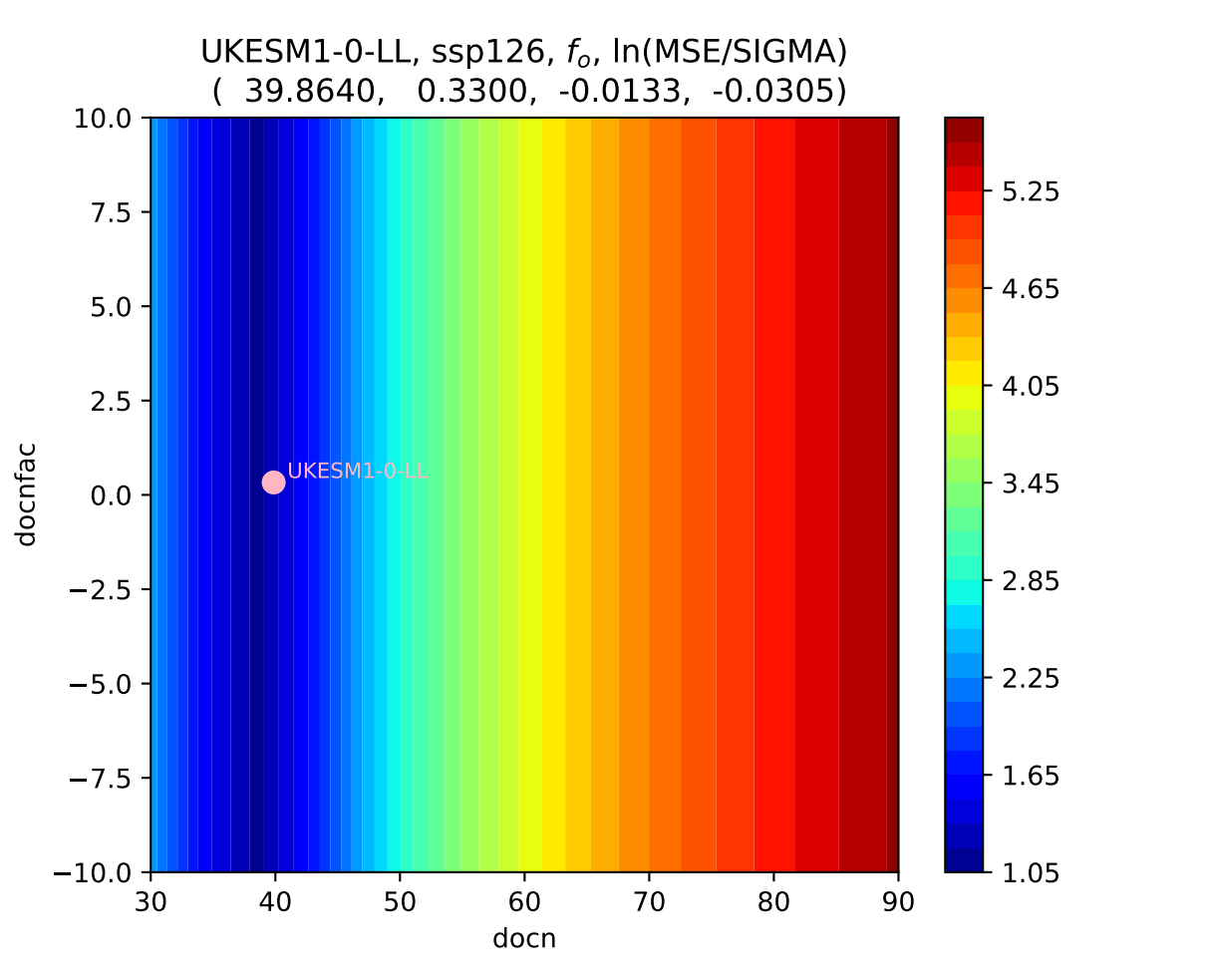

UKESM1-0-LL, ssp126, f_o
ESM-Fit
f_o, ESM - FIT
Year

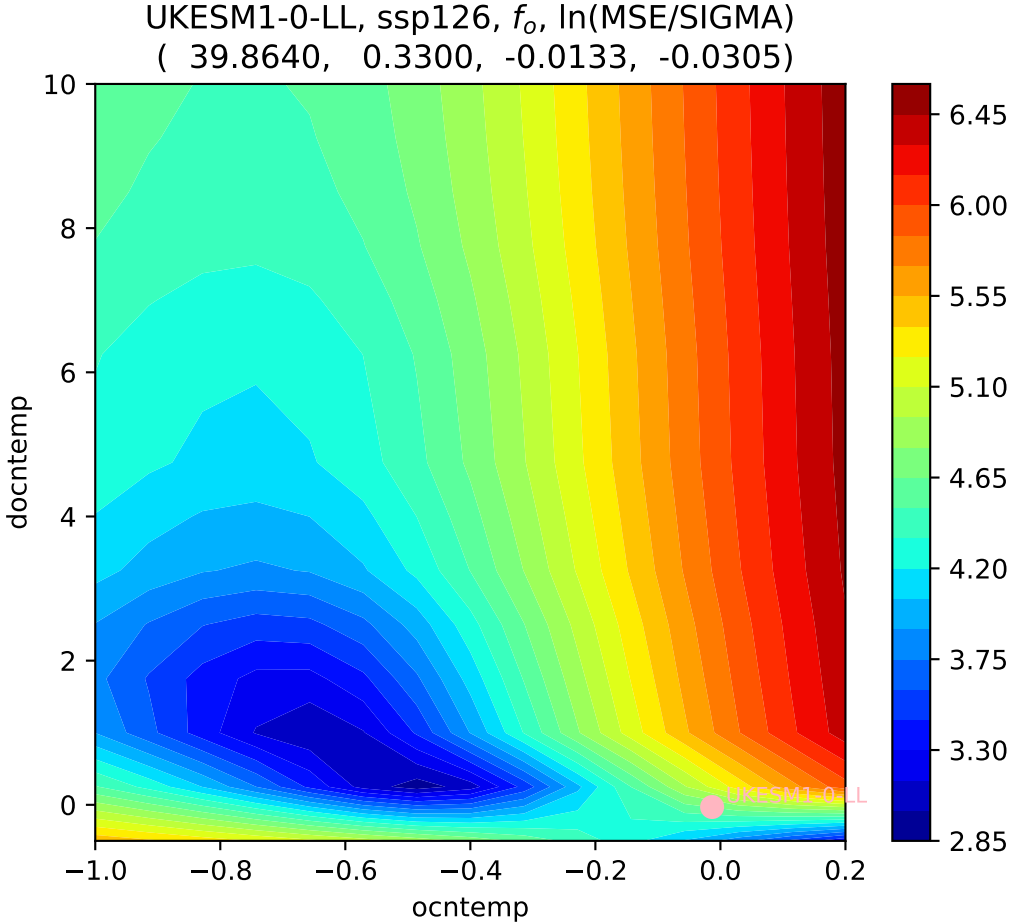

UKESM1-0-LL, ssp126, f_o
ESM
Fit
f_o
ΔT


UKESM1-0-LL, ssp126, f_o
ESM-Fit
f_o, ESM - FIT
ΔT


UKESM1-0-LL, ssp126, f_o
ESM
Fit
f_o
c_atm


UKESM1-0-LL, ssp126, f_o
ESM-Fit
f_o, ESM - FIT
c_atm


UKESM1-0-LL, ssp126, f_o, ln(MSE/SIGMA)
(39.8640, 0.3300, -0.0133, -0.0305)
UKESM1-0-LL
docnfac
docn
10.0
7.5
5.0
2.5
0.0
−2.5
−5.0
−7.5
−10.0
30
40
50
60
70
80
90
5.25
4.65
4.05
3.45
2.85
2.25
1.65
1.05


UKESM1-0-LL, ssp126, f_o, ln(MSE/SIGMA)
(39.8640, 0.3300, -0.0133, -0.0305)
10
8
6
4
2
0
docntemp
−1.0
−0.8
−0.6
−0.4
−0.2
0.0
0.2
ocntemp
UKESM1-0-LL
6.45
6.00
5.55
5.10
4.65
4.20
3.75
3.30
2.85