Supplemental Information (S2) to

Different Mechanisms of Arctic and Antarctic sea ice response to ocean heat transport

Climate Dynamics (2021)

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This document contains contour plots as in Figs. 2–3 of the main article for all 20 models analysed:

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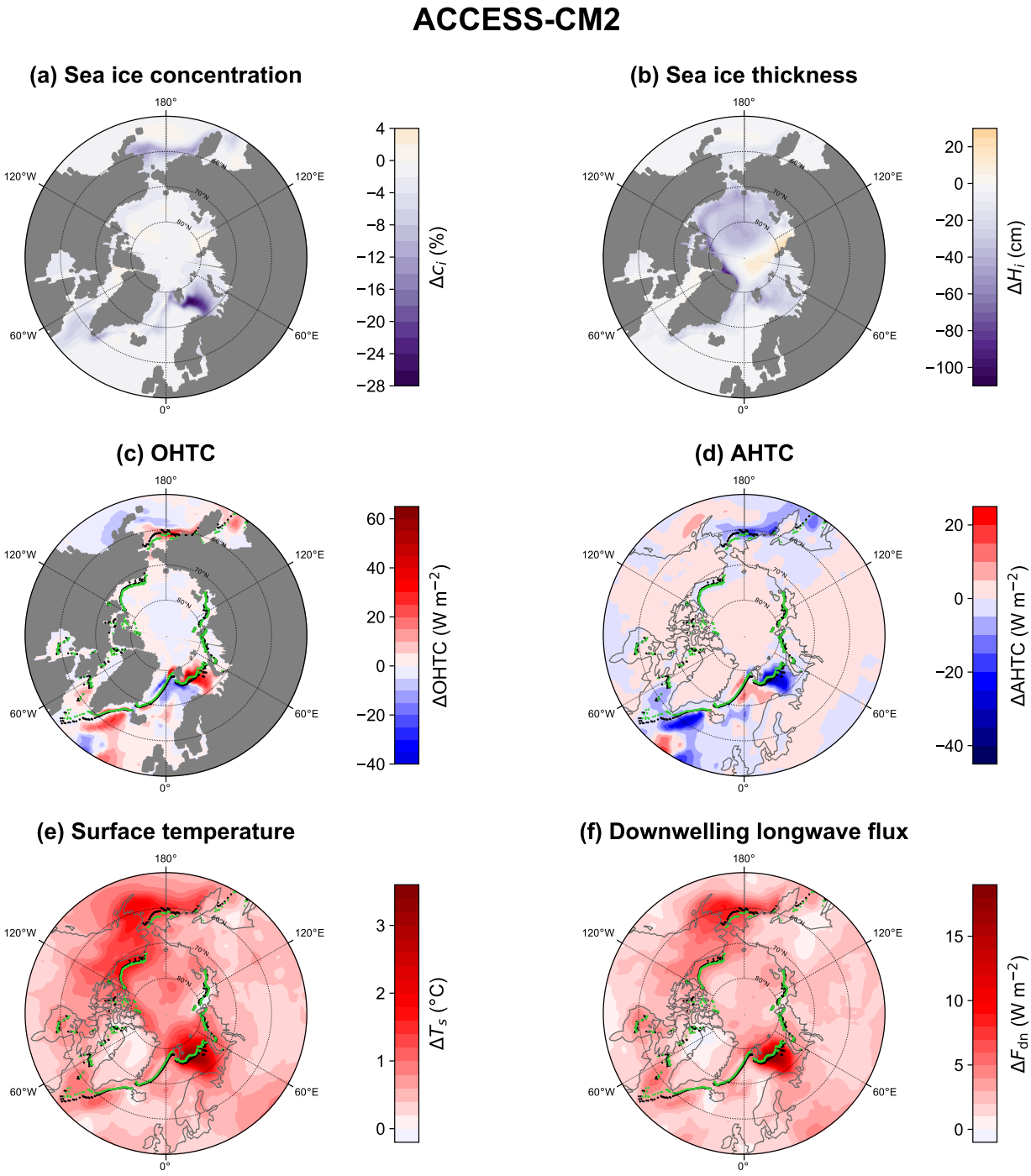


Fig. S2.1. Change in (a) sea ice concentration, c_i, (b) sea ice thickness, H_i, (c) ocean heat transport convergence (OHTC), (d) atmospheric heat (moist-static energy) transport convergence (AHTC), (e) surface air temperature, T_s, and (f) downwelling longwave radiation, f_{dn}, between the maximum and minimum 25 year mean Arctic sea ice edge in the pre-industrial (PI) control simulation of ACCESS-CM2. In (c)–(f), green (black) points trace the minimum (maximum) sea ice edge, which occur for the averages over years 125–150 (425–450)

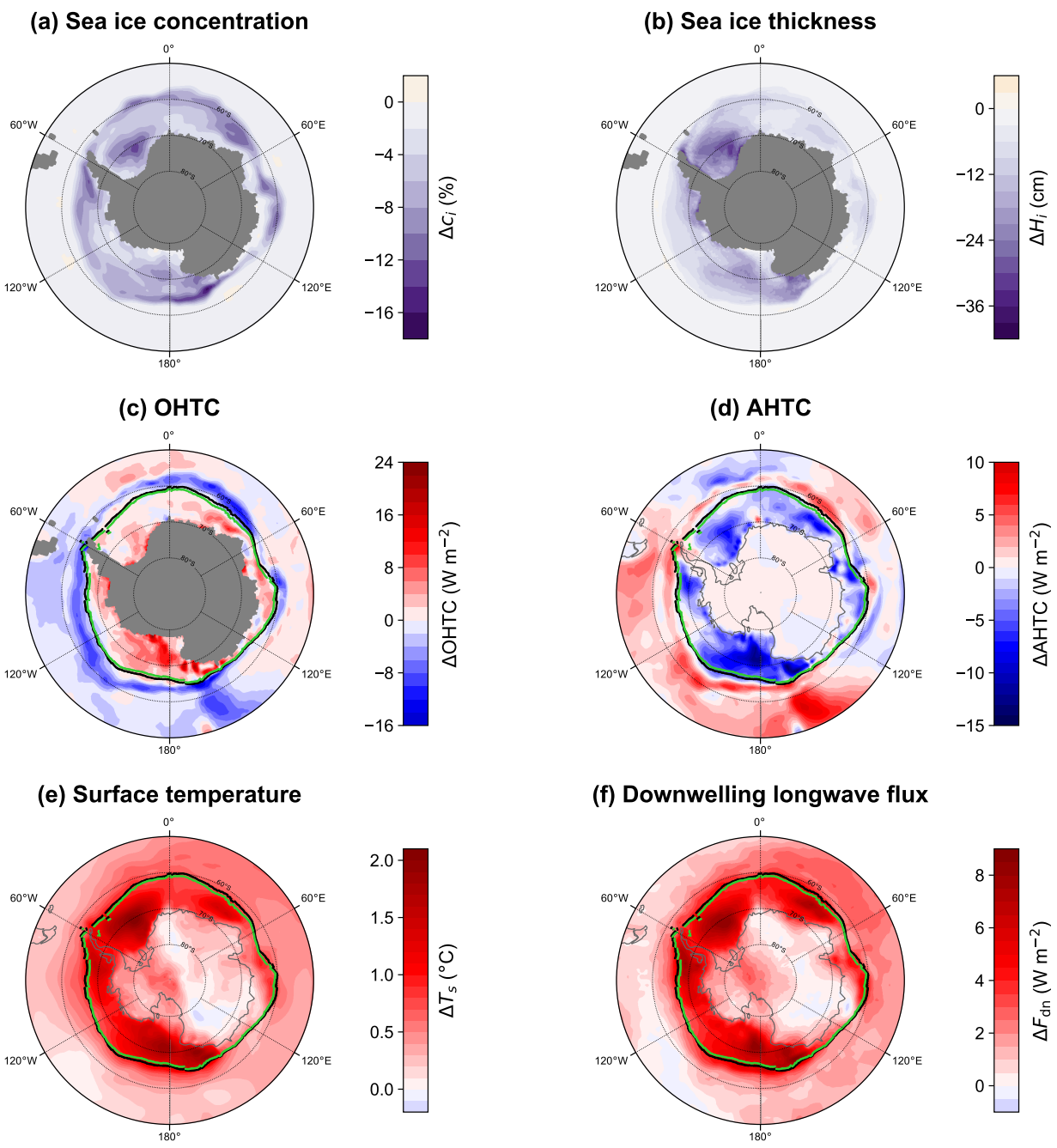


Fig. S2.2. As in Fig. S2.1 but for the southern hemisphere. The minimum (maximum) 25 year mean sea ice edge occur for the averages over years 0–25 (425–450)

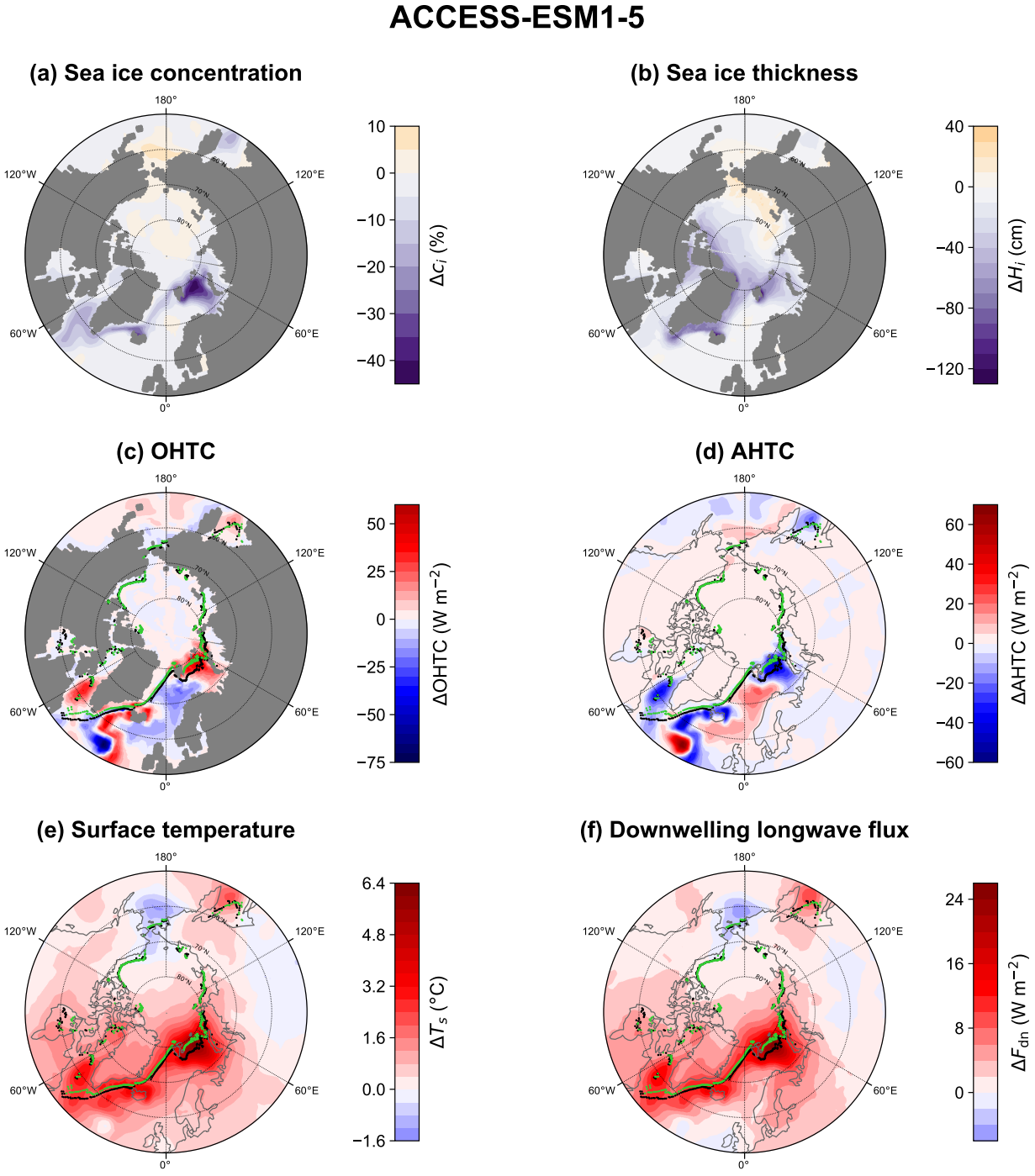


Fig. S2.3. As in Fig. S2.1 but for ACCESS-ESM1-5. Minimum (maximum) 25 year mean sea ice edge occurs for the averages over years 475–500 (575–600) of the PI-control run

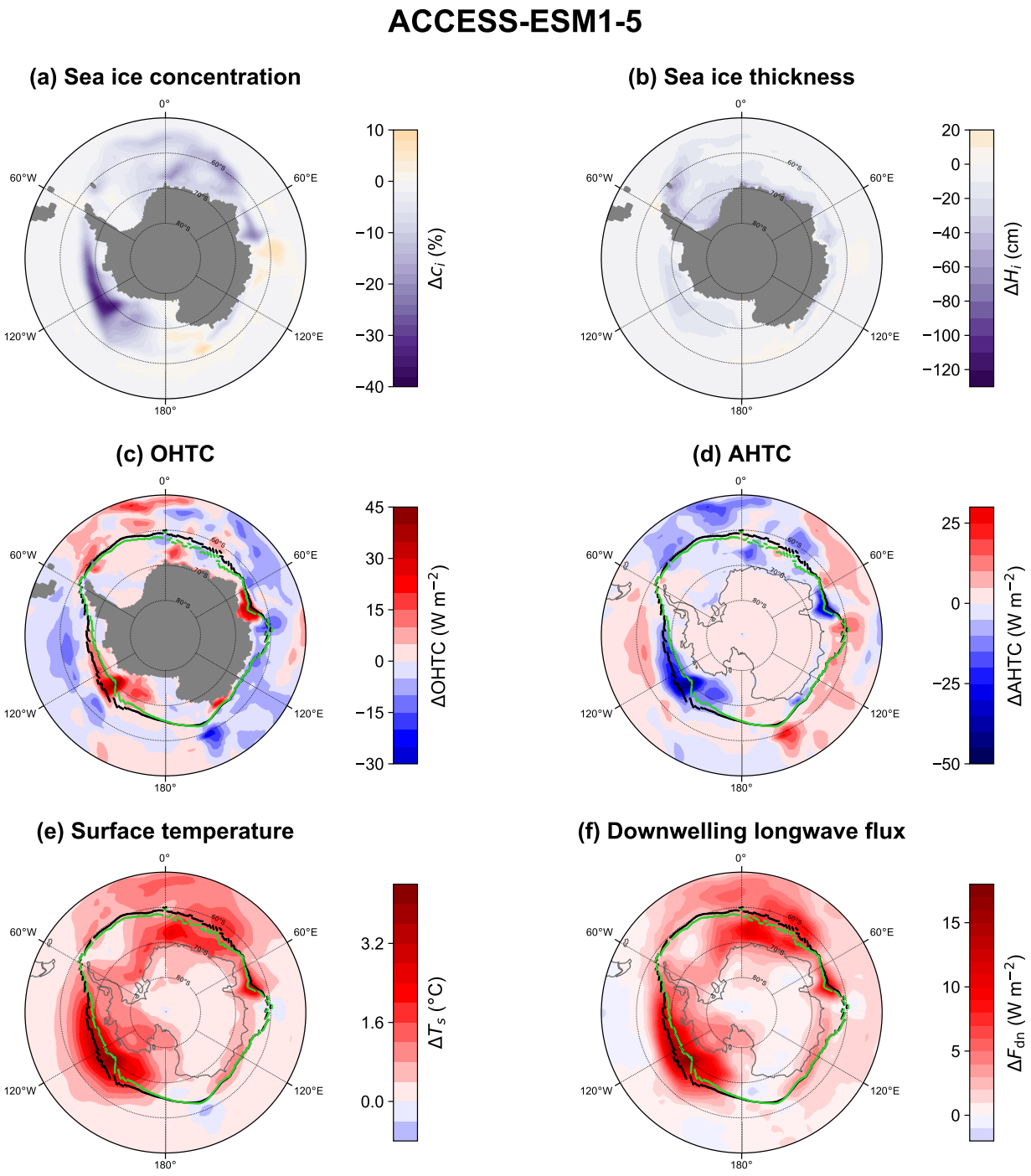


Fig. S2.4. As in Fig. S2.2 but for ACCESS-ESM1-5. Minimum (maximum) 25 year mean sea ice edge occurs for the averages over years 375–400 (675–700) of the PI-control run

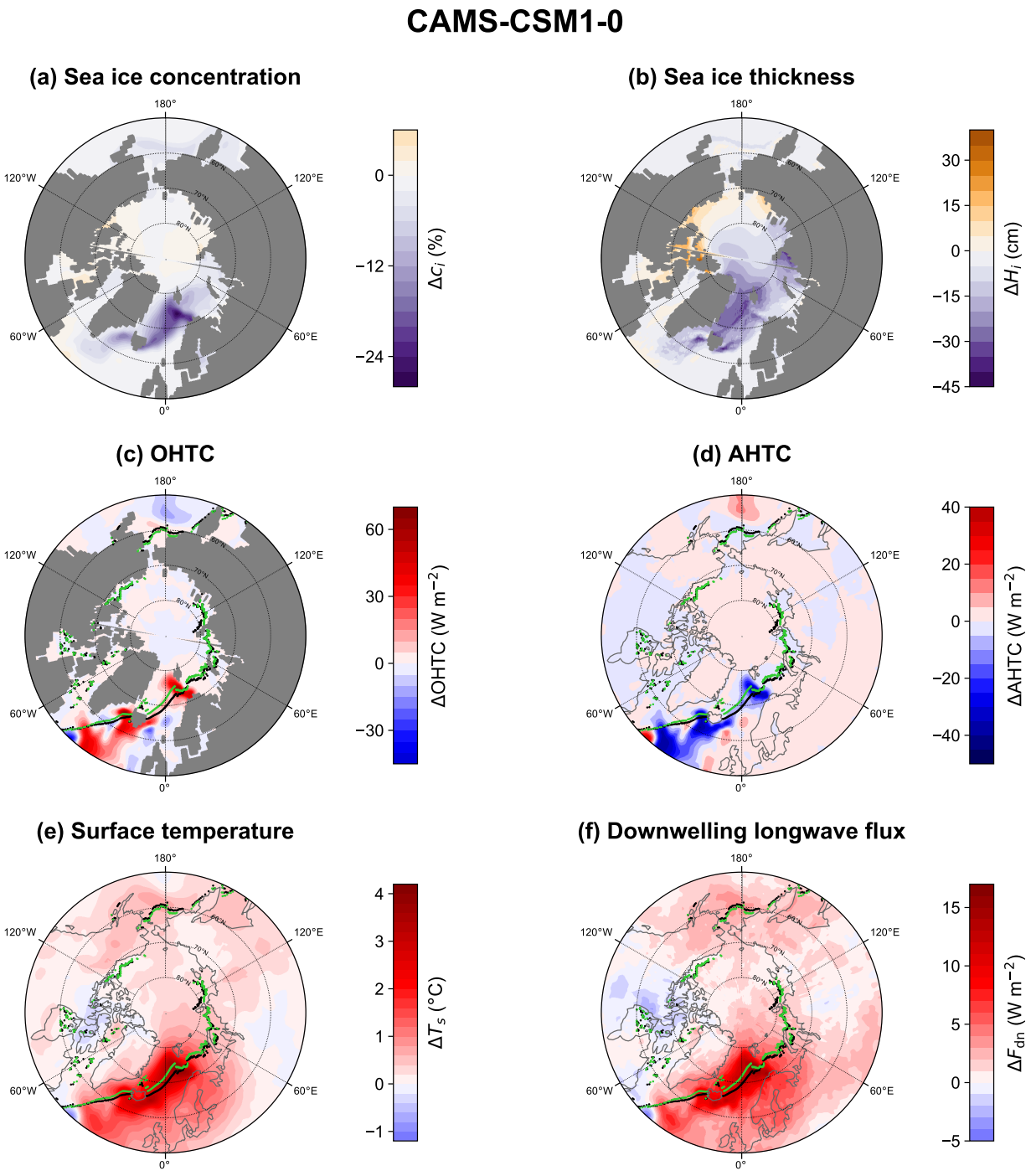


Fig. S2.5. As in Fig. S2.1 but for CAMS-CSM1-0. Minimum (maximum) 25 year mean sea ice edge occurs for the averages over years 50–75 (375–400) of the PI-control run

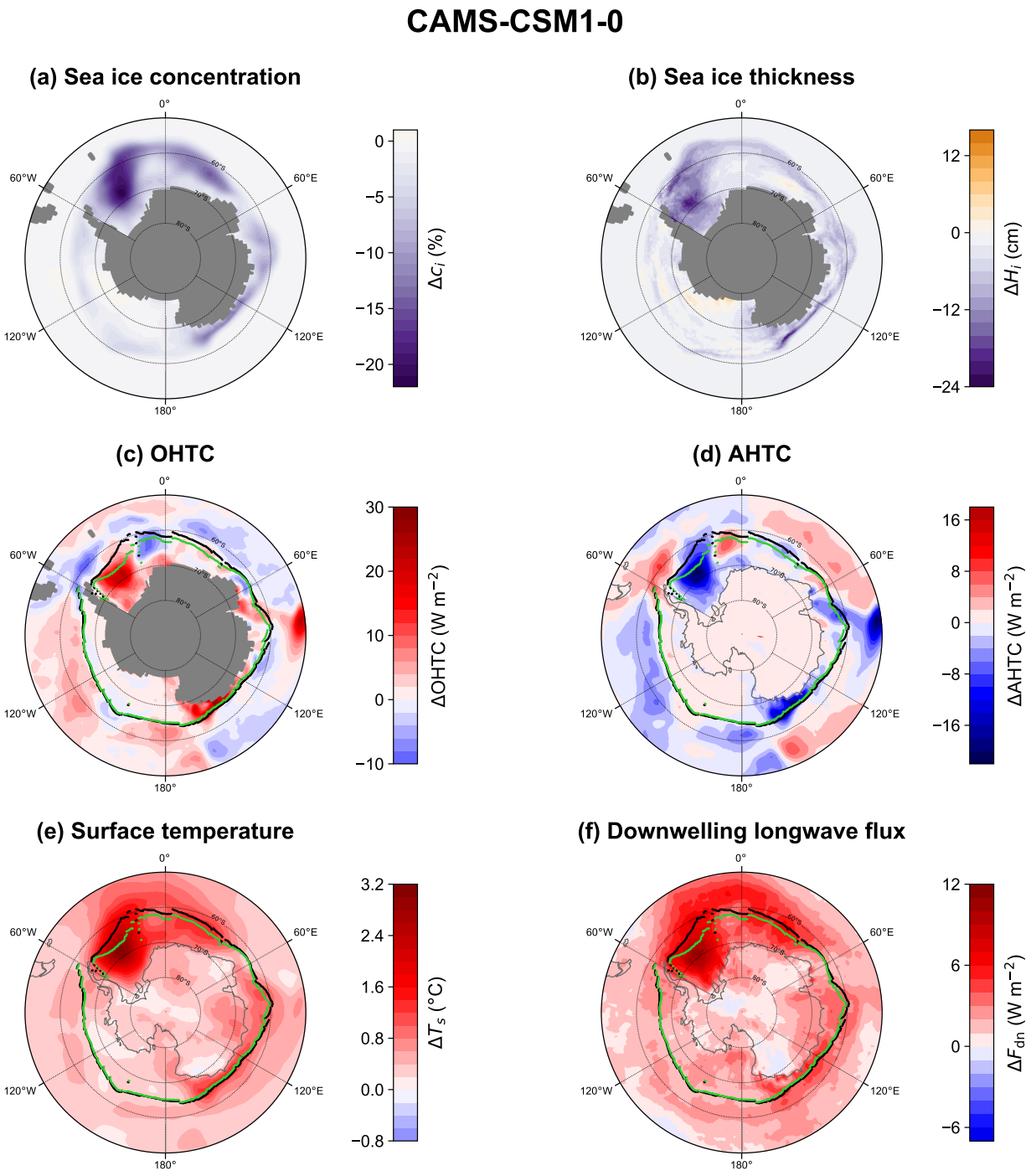


Fig. S2.6. As in Fig. S2.2 but for CAMS-CSM1-0. Minimum (maximum) 25 year mean sea ice edge occurs for the averages over years 50–75 (475–500) of the PI-control run

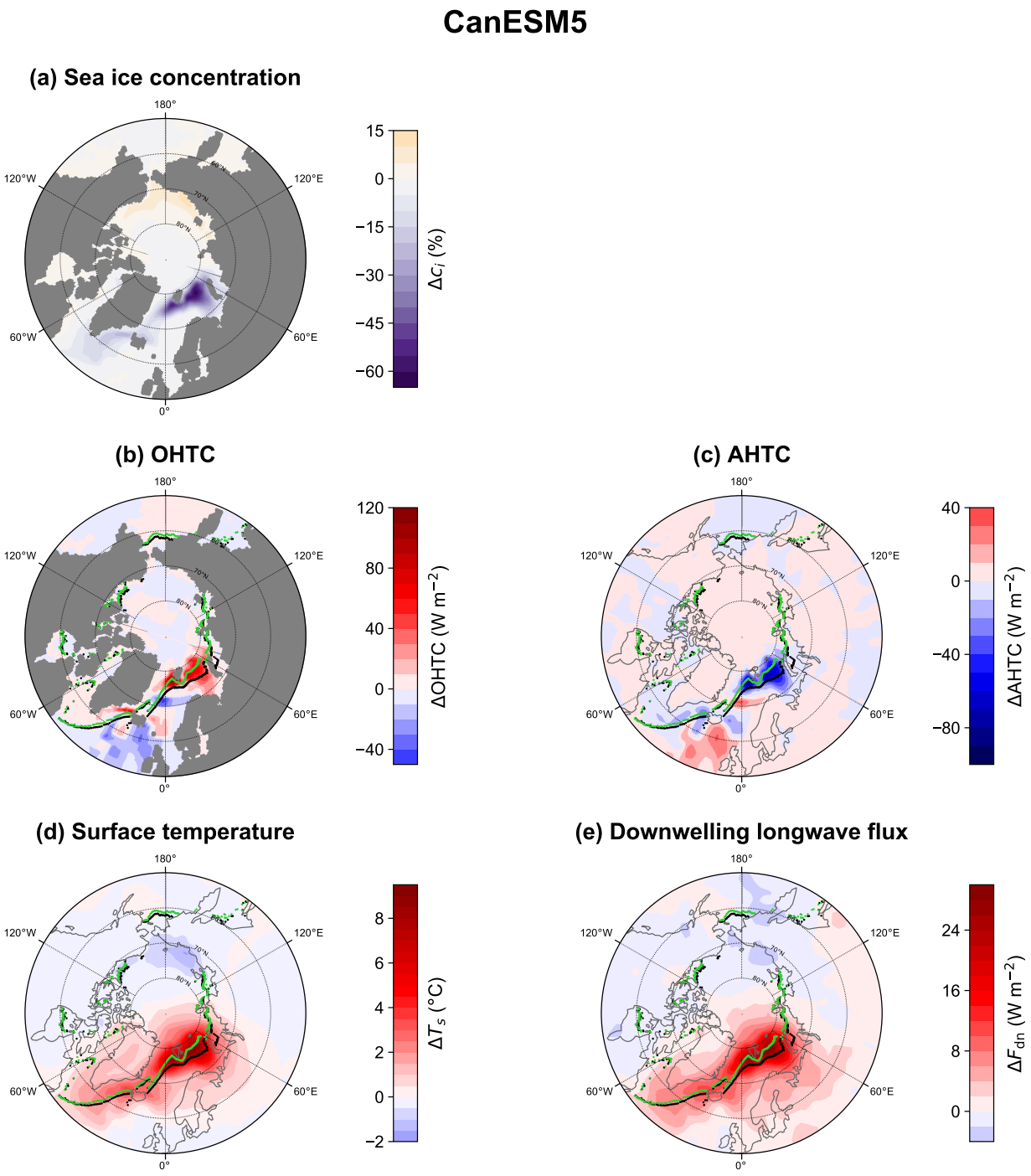


Fig. S2.7. As in Fig. S2.1 but for CanESM5. Raw data required to produce sea ice thickness was not available for this model. Minimum (maximum) 25 year mean sea ice edge occurs for the averages over years 1000–1025 (650–675) of the PI-control run

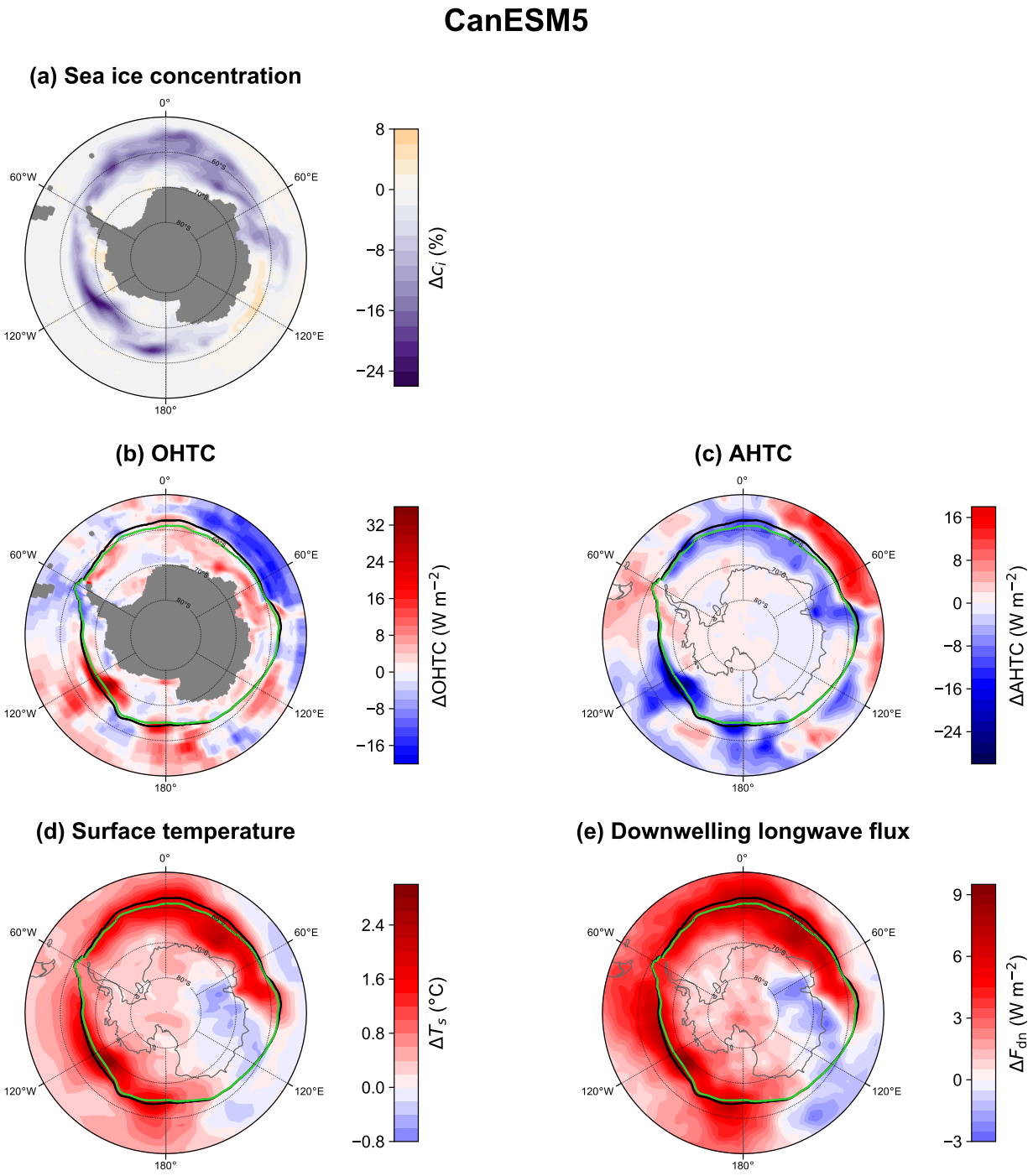


Fig. S2.8. As in Fig. S2.2 but for CanESM5. Raw data required to produce sea ice thickness was not available for this model. Minimum (maximum) 25 year mean sea ice edge occurs for the averages over years 975–1000 (150–175) of the PI-control run

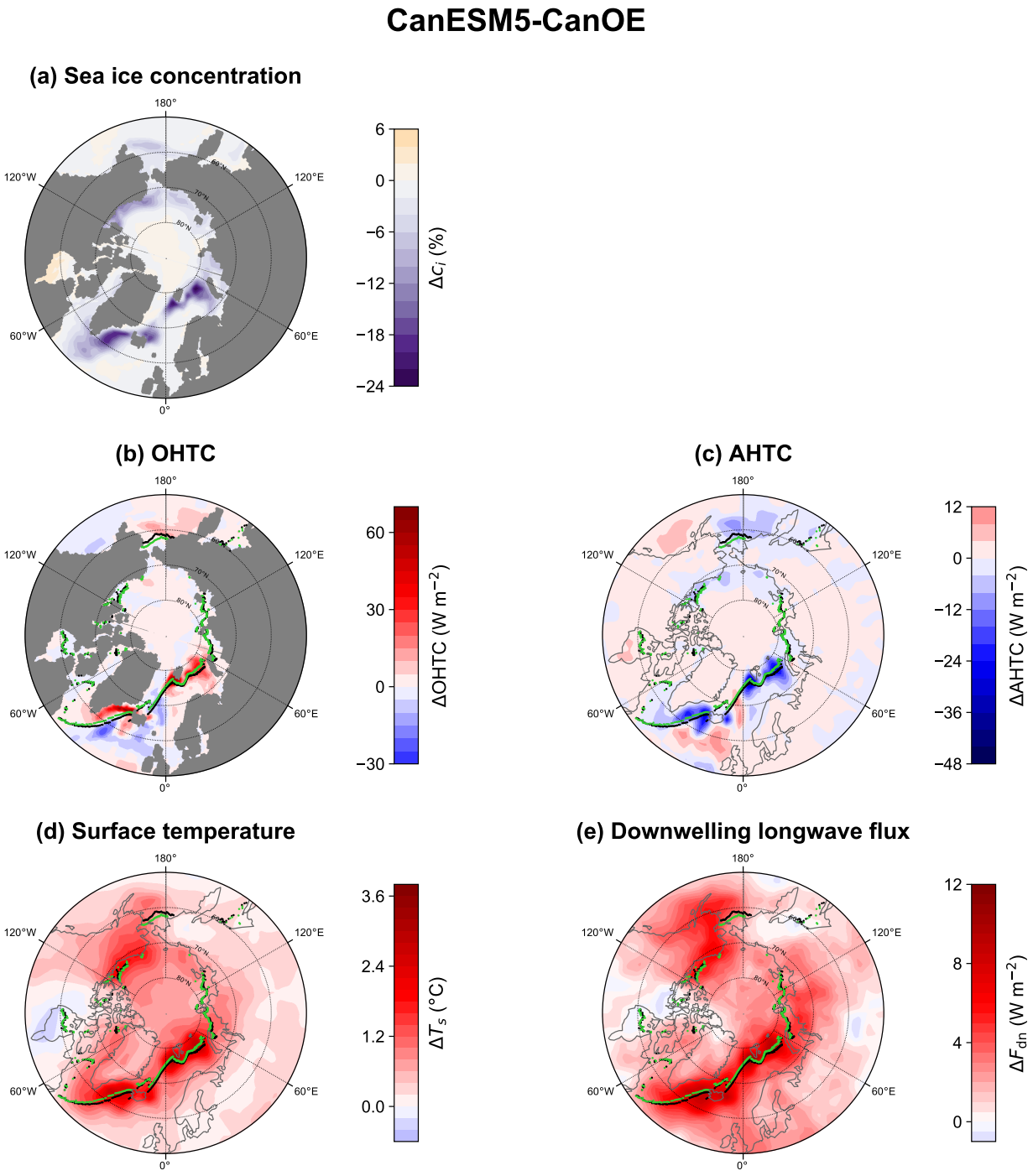


Fig. S2.9. As in Fig. S2.1 but for CanESM5-CanOE. Raw data required to produce sea ice thickness was not available for this model. Minimum (maximum) 25 year mean sea ice edge occurs for the averages over years 100–125 (175–200) of the PI-control run

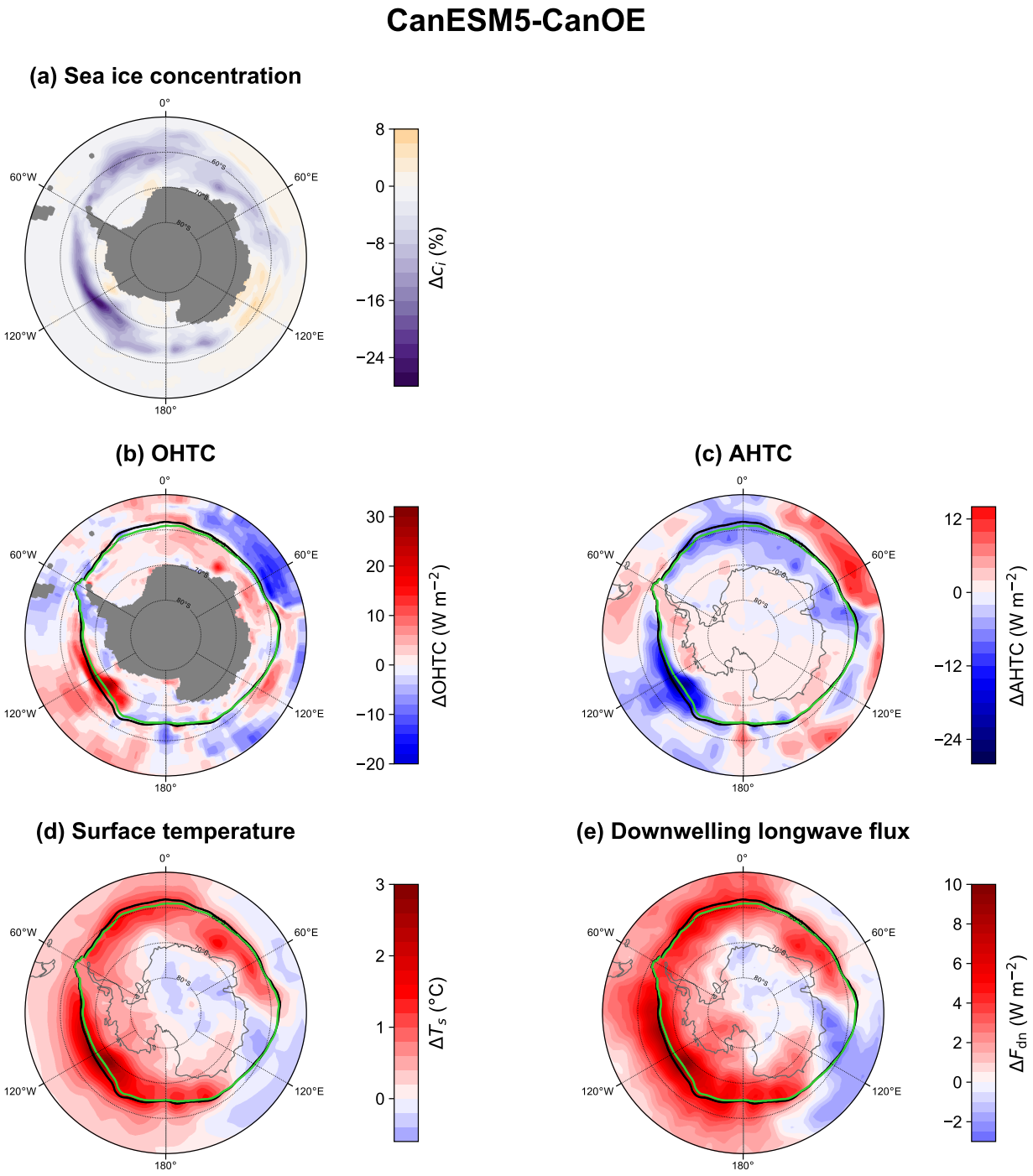


Fig. S2.10. As in Fig. S2.2 but for CanESM5-CanOE. Raw data required to produce sea ice thickness was not available for this model. Minimum (maximum) 25 year mean sea ice edge occurs for the averages over years 400–425 (150–175) of the PI-control run

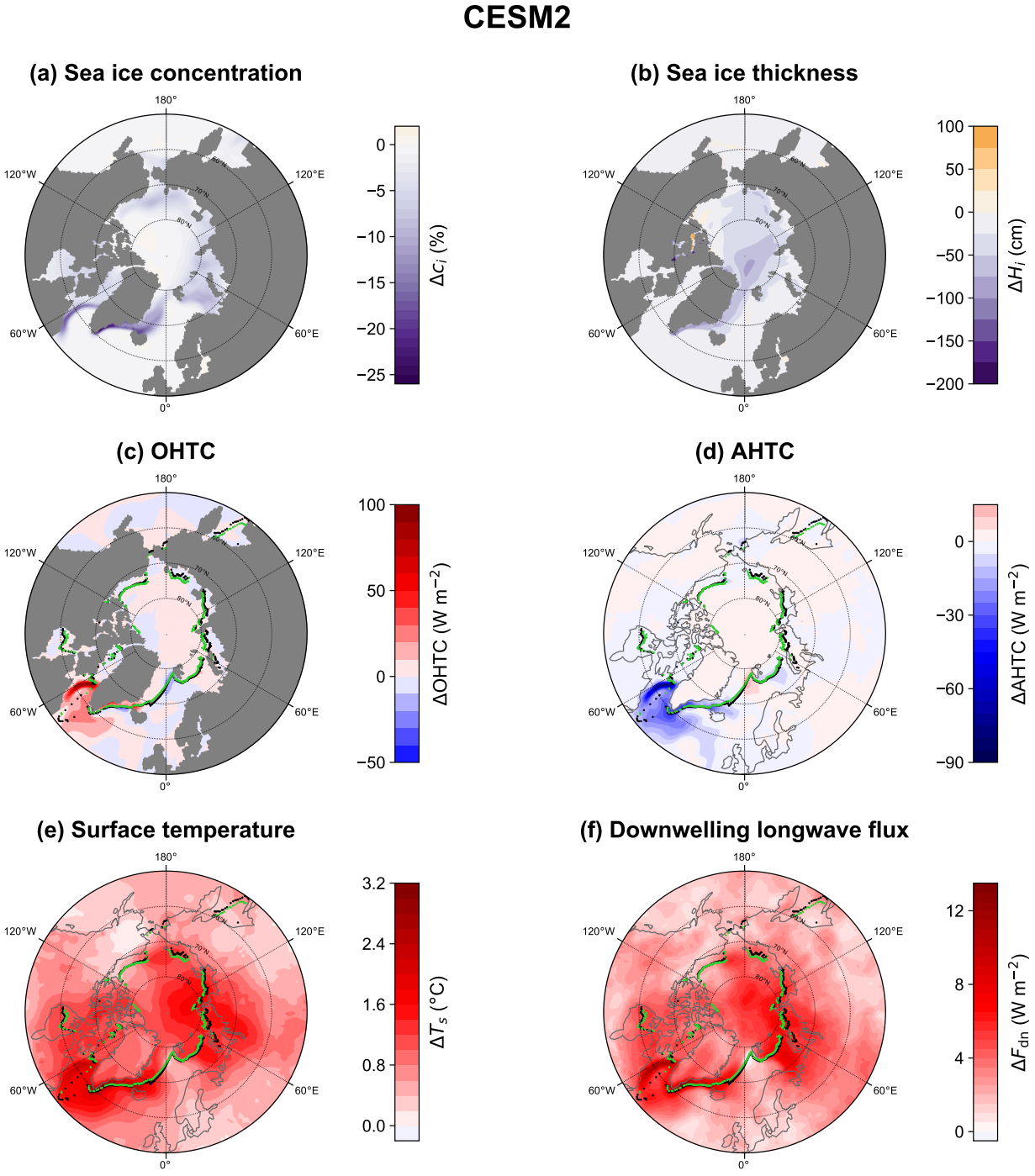


Fig. S2.11. As in Fig. S2.1 but for CESM2. Minimum (maximum) 25 year mean sea ice edge occurs for the averages over years 125–150 (800–825) of the PI-control run

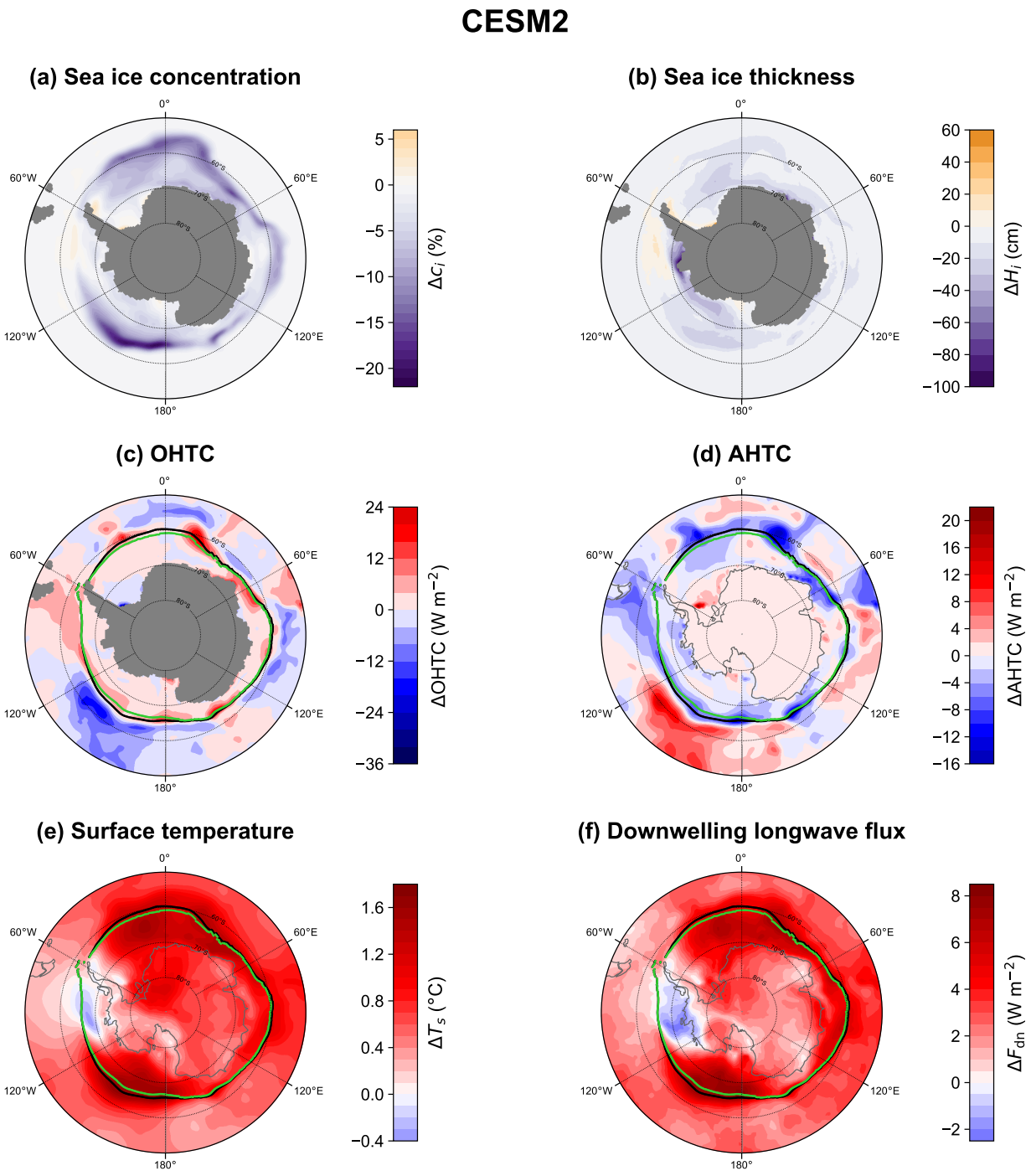


Fig. S2.12. As in Fig. S2.2 but for CESM2. Minimum (maximum) 25 year mean sea ice edge occurs for the averages over years 25–50 (1150–1175) of the PI-control run

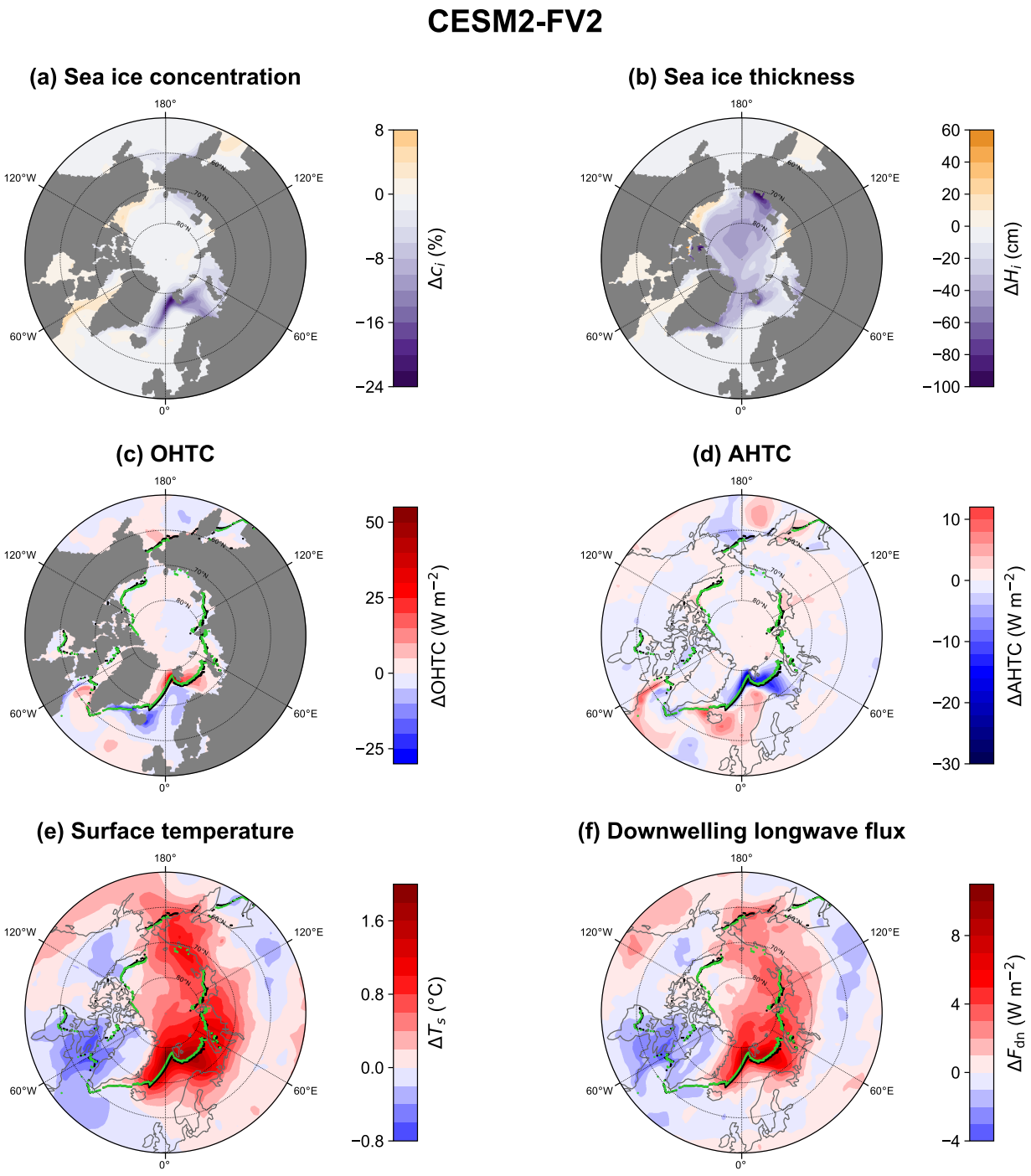


Fig. S2.13. As in Fig. S2.1 but for CESM2-FV2. Minimum (maximum) 25 year mean sea ice edge occurs for the averages over years 200–225 (450–475) of the PI-control run

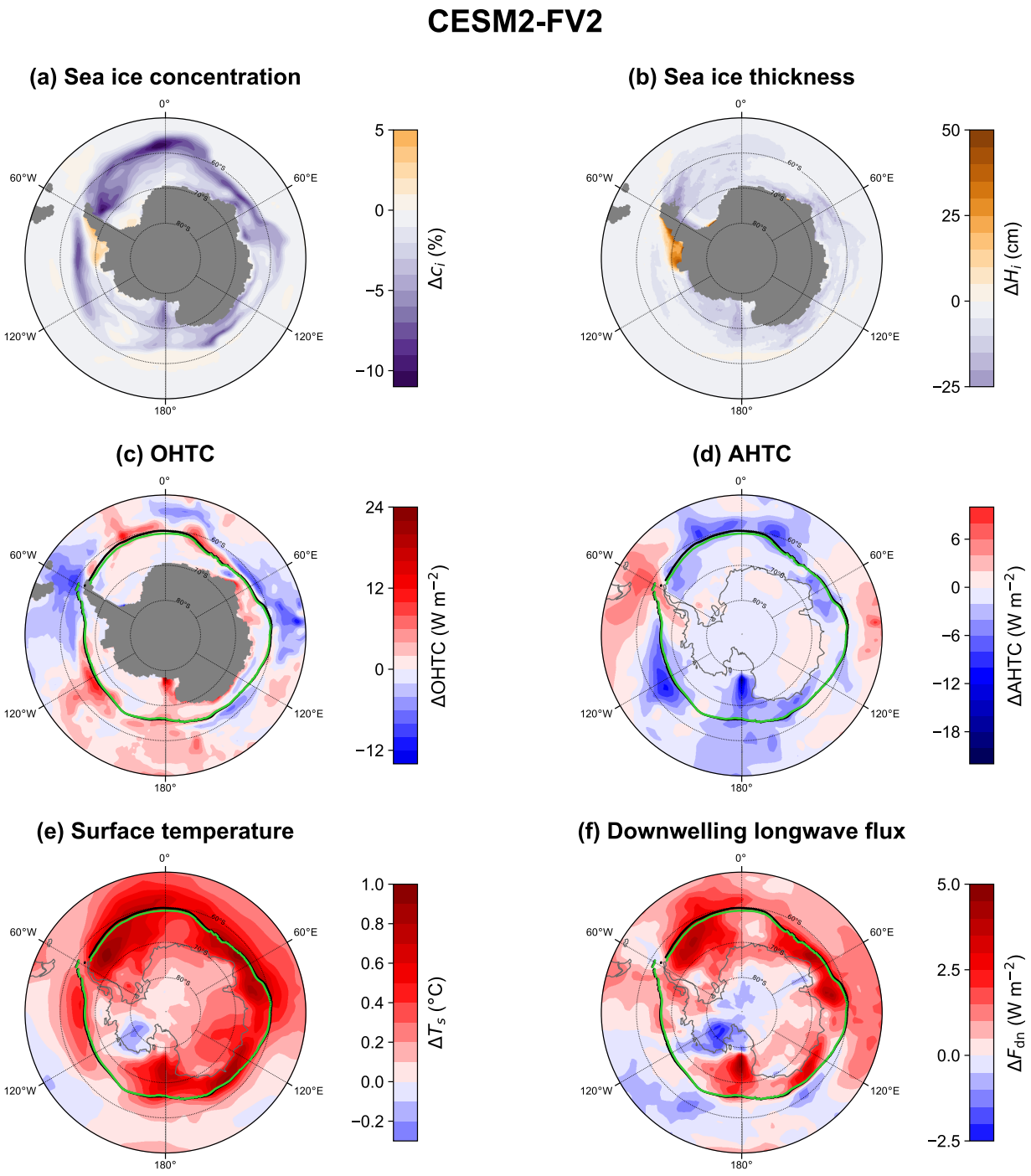


Fig. S2.14. As in Fig. S2.2 but for CESM2-FV2. Minimum (maximum) 25 year mean sea ice edge occurs for the averages over years 275–300 (350–375) of the PI-control run

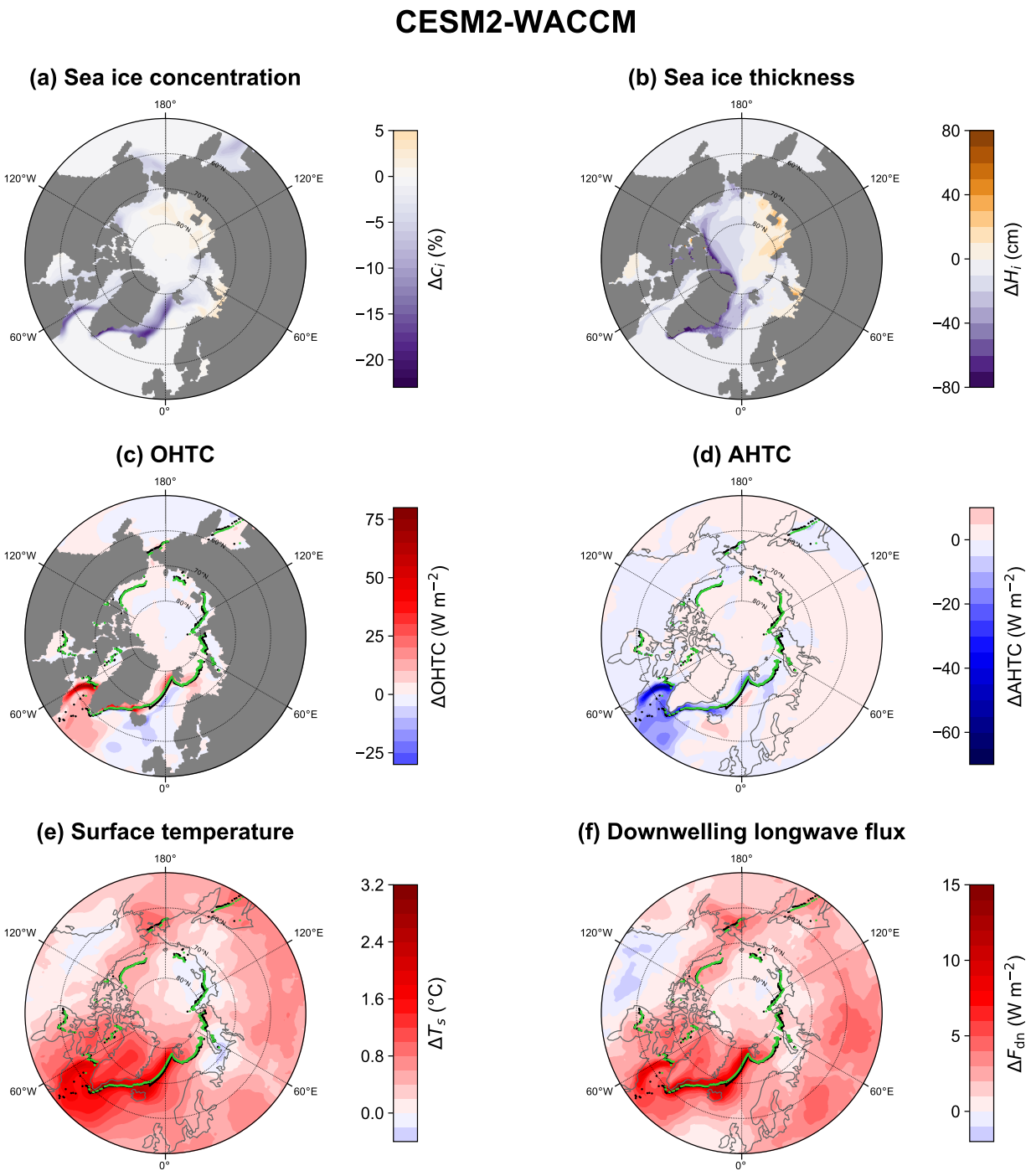


Fig. S2.15. As in Fig. S2.1 but for CESM2-WACCM. Minimum (maximum) 25 year mean sea ice edge occurs for the averages over years 75–100 (400–425) of the PI-control run

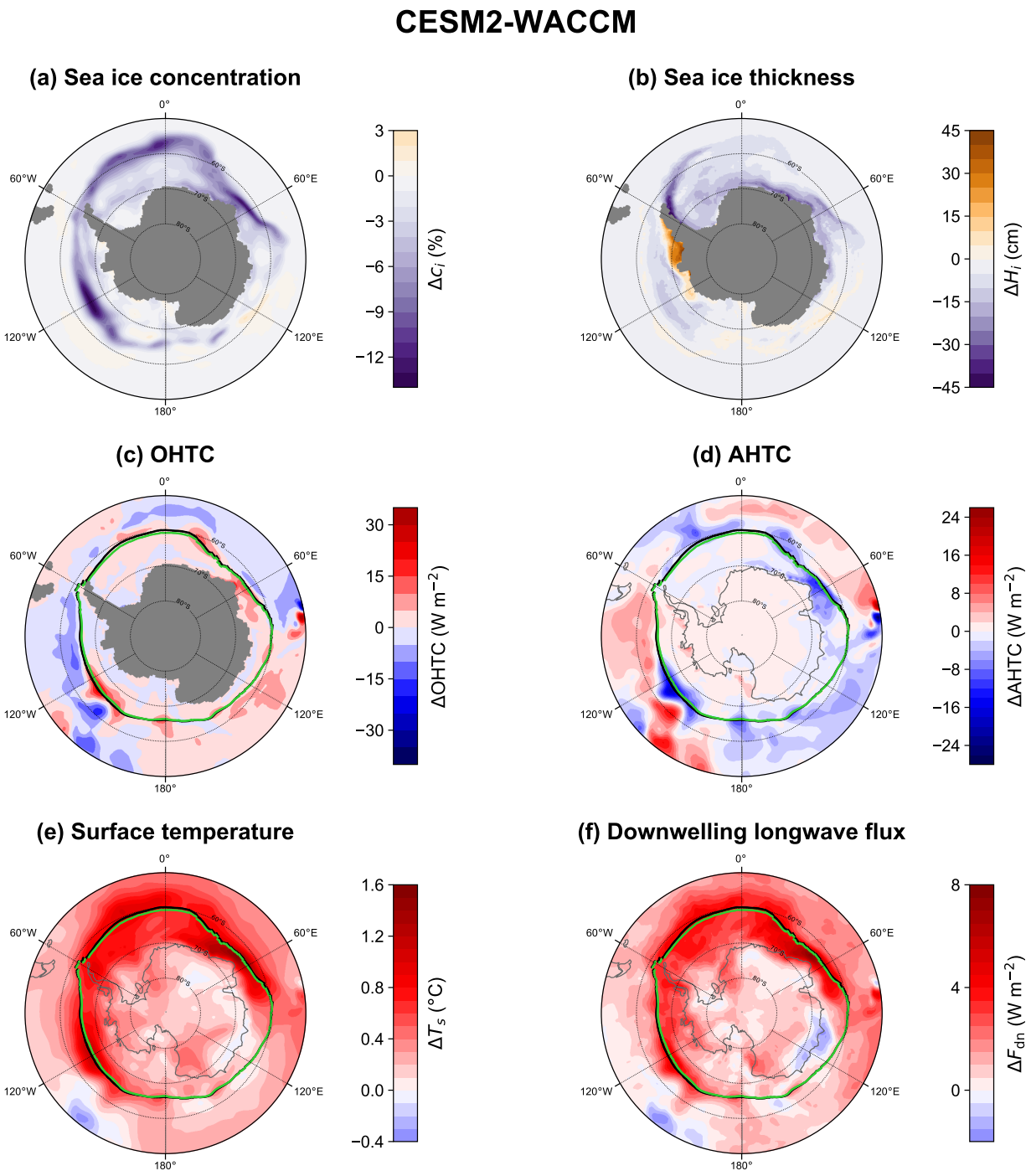


Fig. S2.16. As in Fig. S2.2 but for CESM2-WACCM. Minimum (maximum) 25 year mean sea ice edge occurs for the averages over years 50–75 (350–375) of the PI-control run

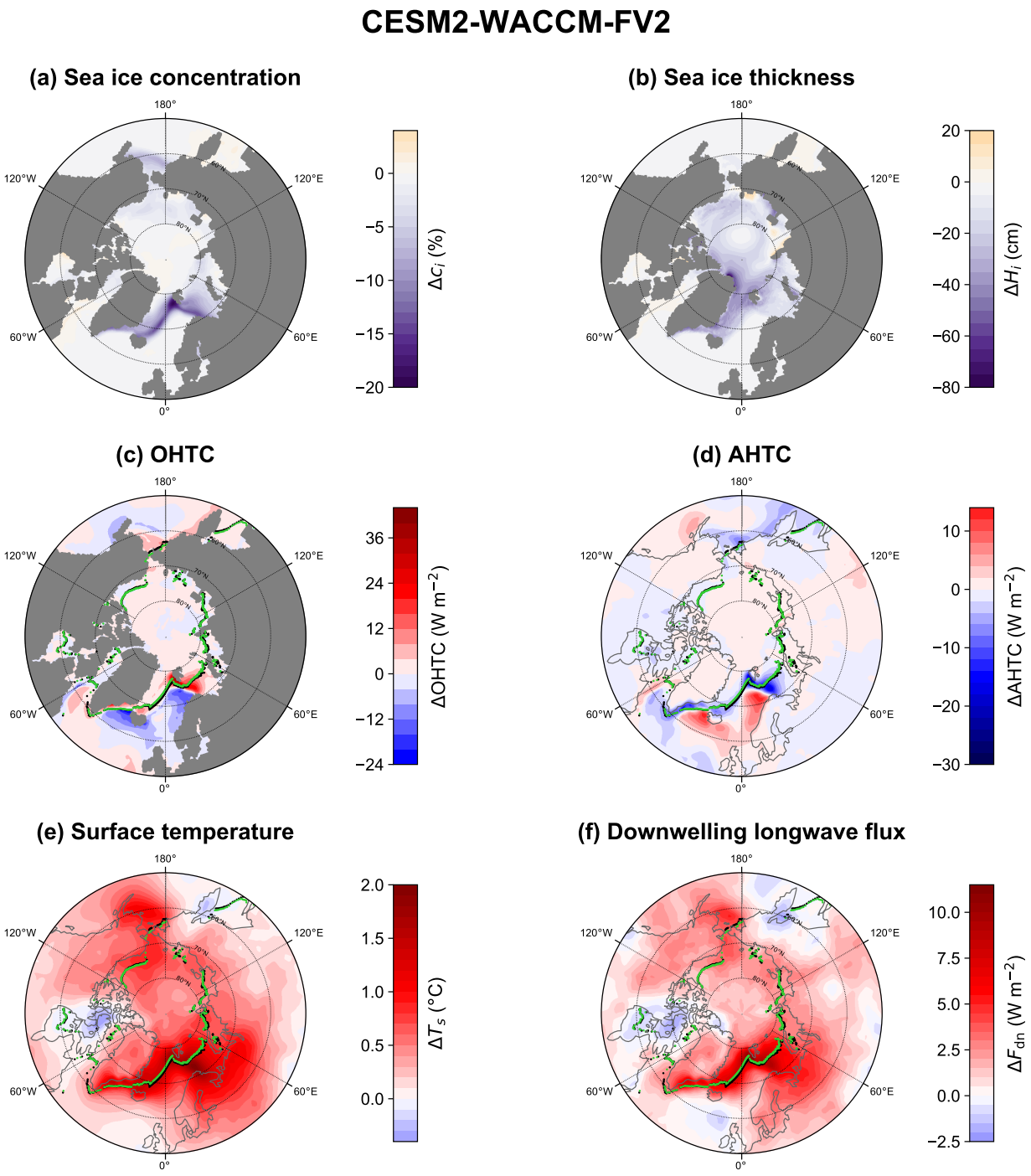


Fig. S2.17. As in Fig. S2.1 but for CESM2-WACCM-FV2. Minimum (maximum) 25 year mean sea ice edge occurs for the averages over years 400–425 (425–450) of the PI-control run

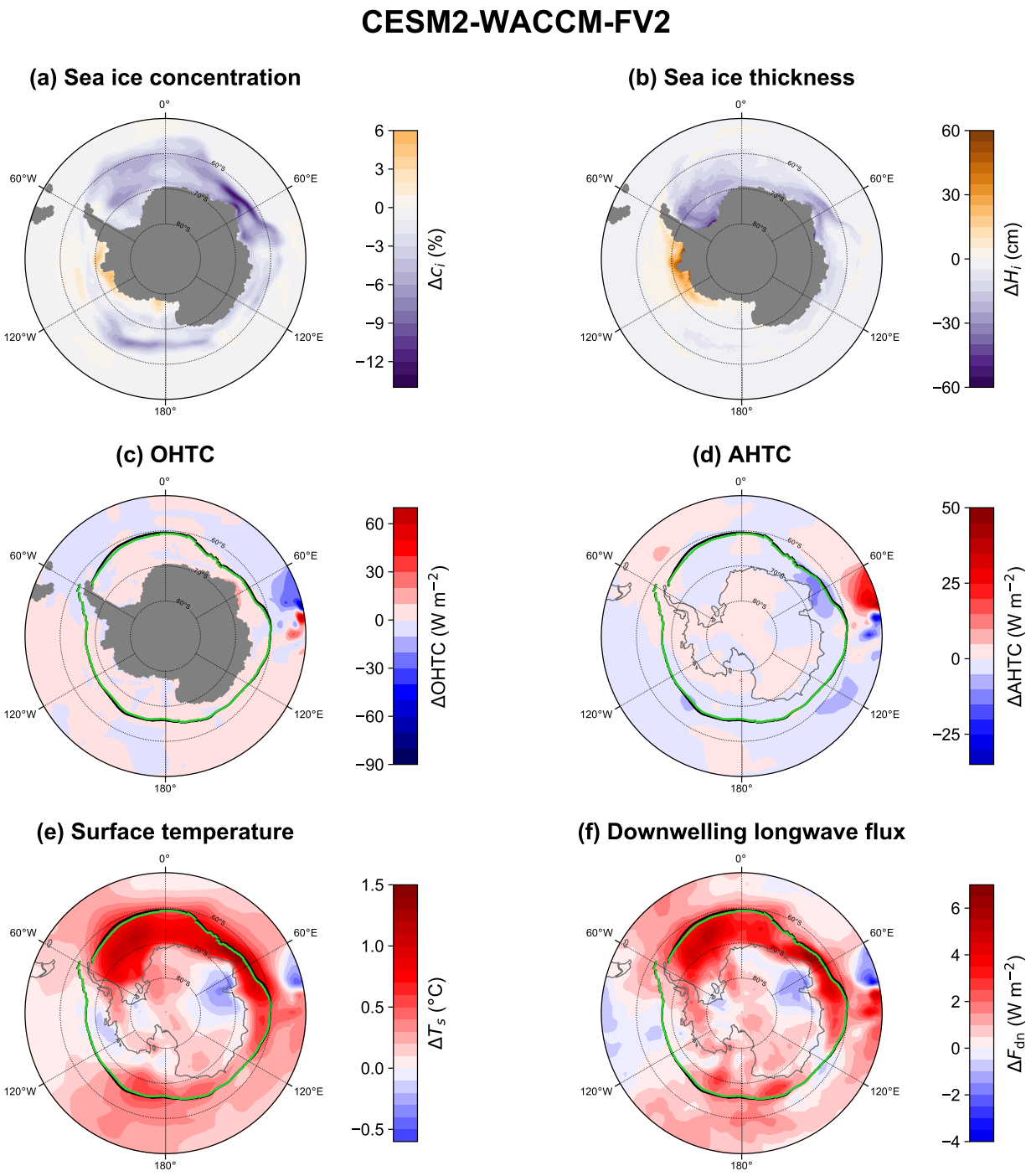


Fig. S2.18. As in Fig. S2.2 but for CESM2-WACCM-FV2. Minimum (maximum) 25 year mean sea ice edge occurs for the averages over years 0–25 (250–275) of the PI-control run

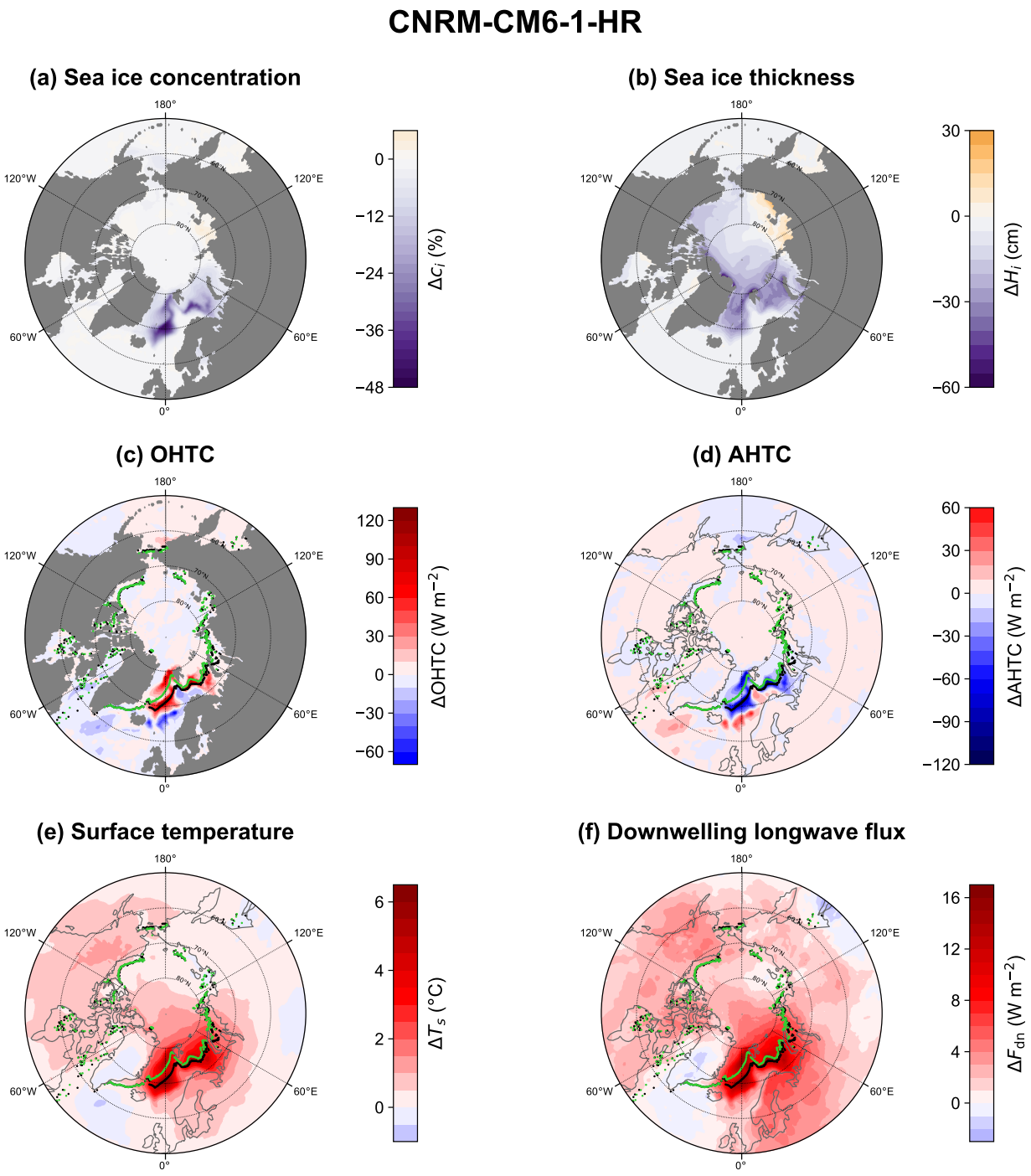


Fig. S2.19. As in Fig. S2.1 but for CNRM-CM6-1-HR. Minimum (maximum) 25 year mean sea ice edge occurs for the averages over years 125–150 (175–200) of the PI-control run

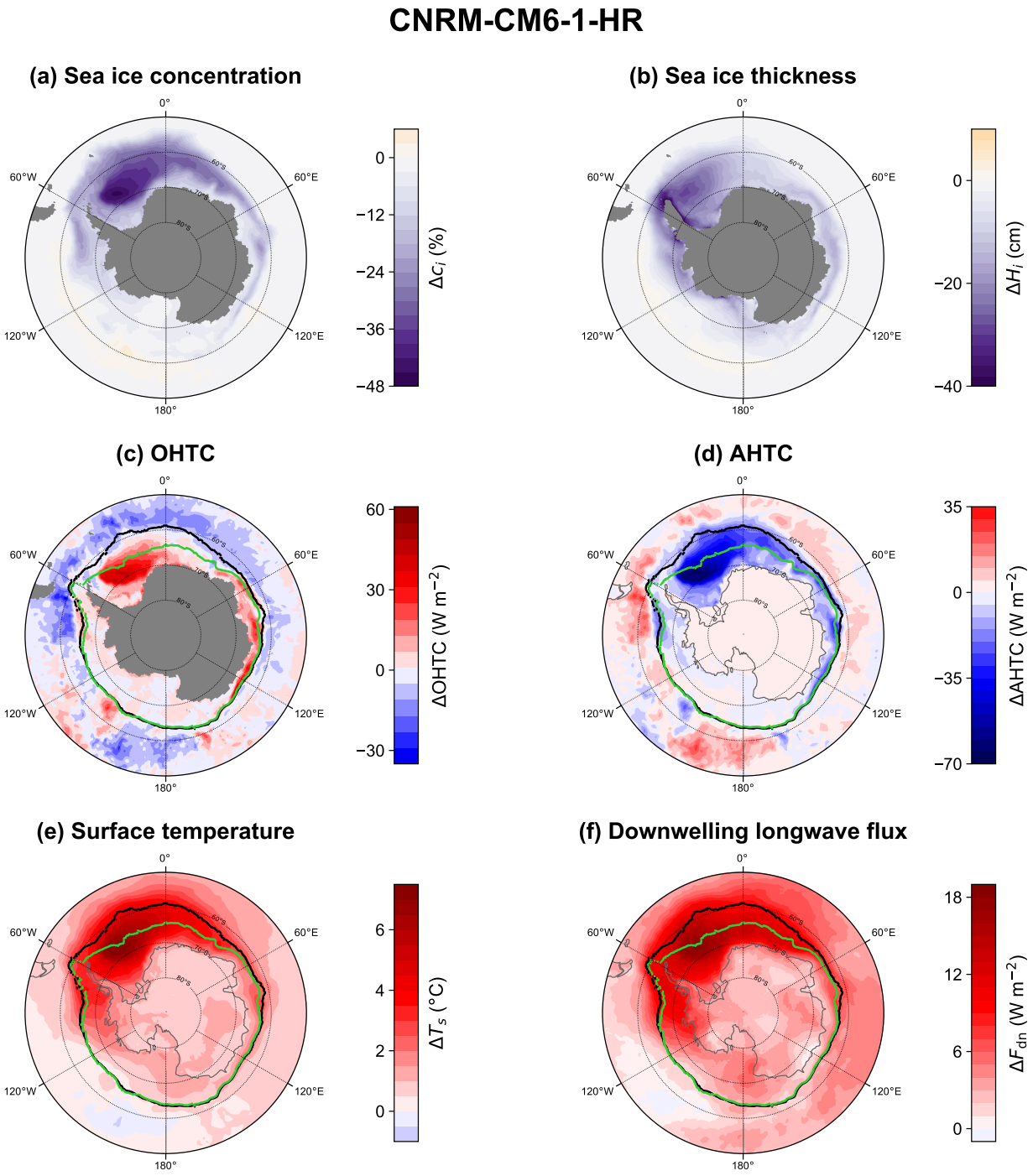


Fig. S2.20. As in Fig. S2.2 but for CNRM-CM6-1-HR. Minimum (maximum) 25 year mean sea ice edge occurs for the averages over years 75–100 (250–275) of the PI-control run

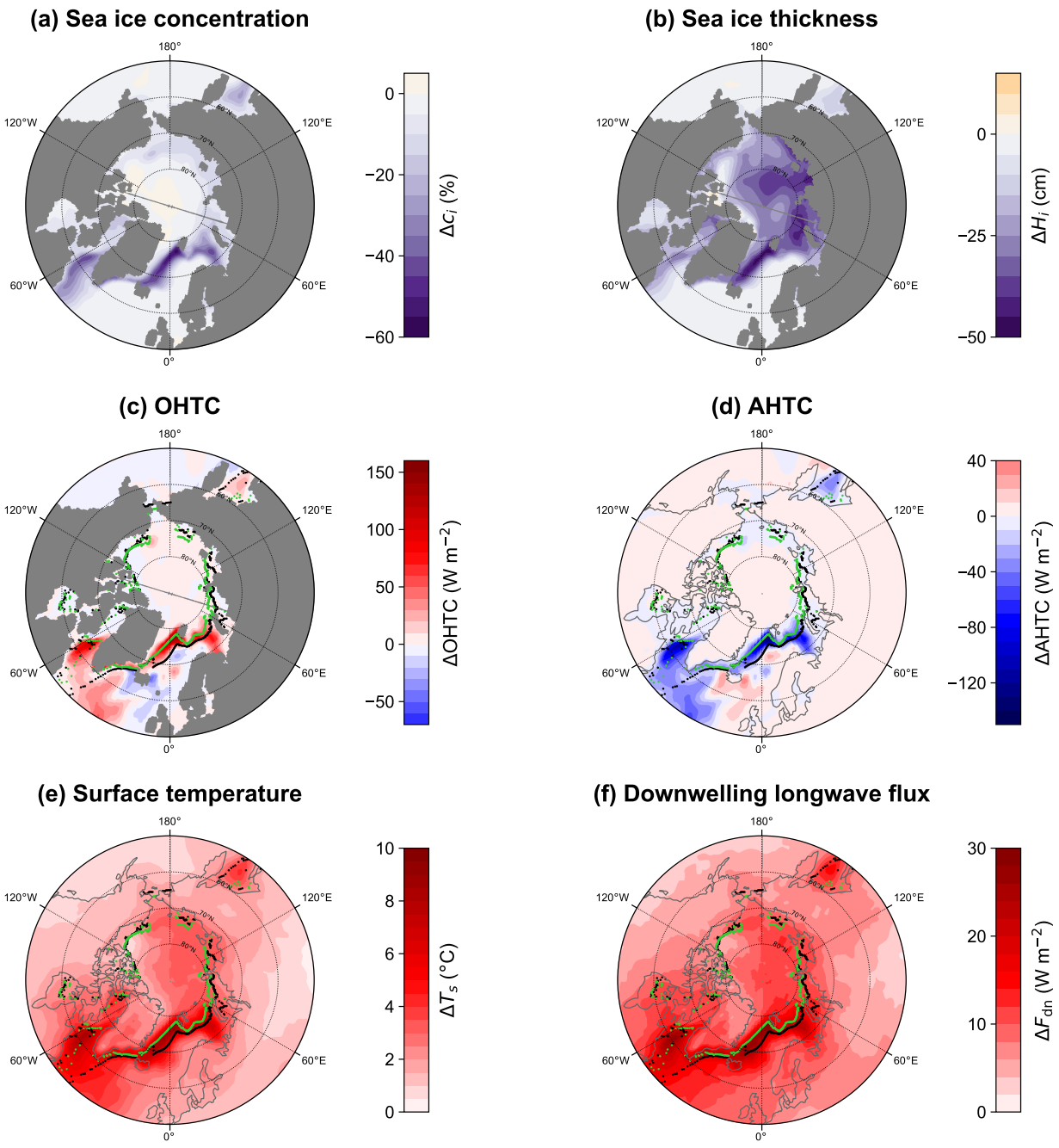


Fig. S2.21. As in Fig. S2.1 but for CNRM-ESM2-1. Minimum (maximum) 25 year mean sea ice edge occurs for the averages over years 275–300 (0–25) of the PI-control run

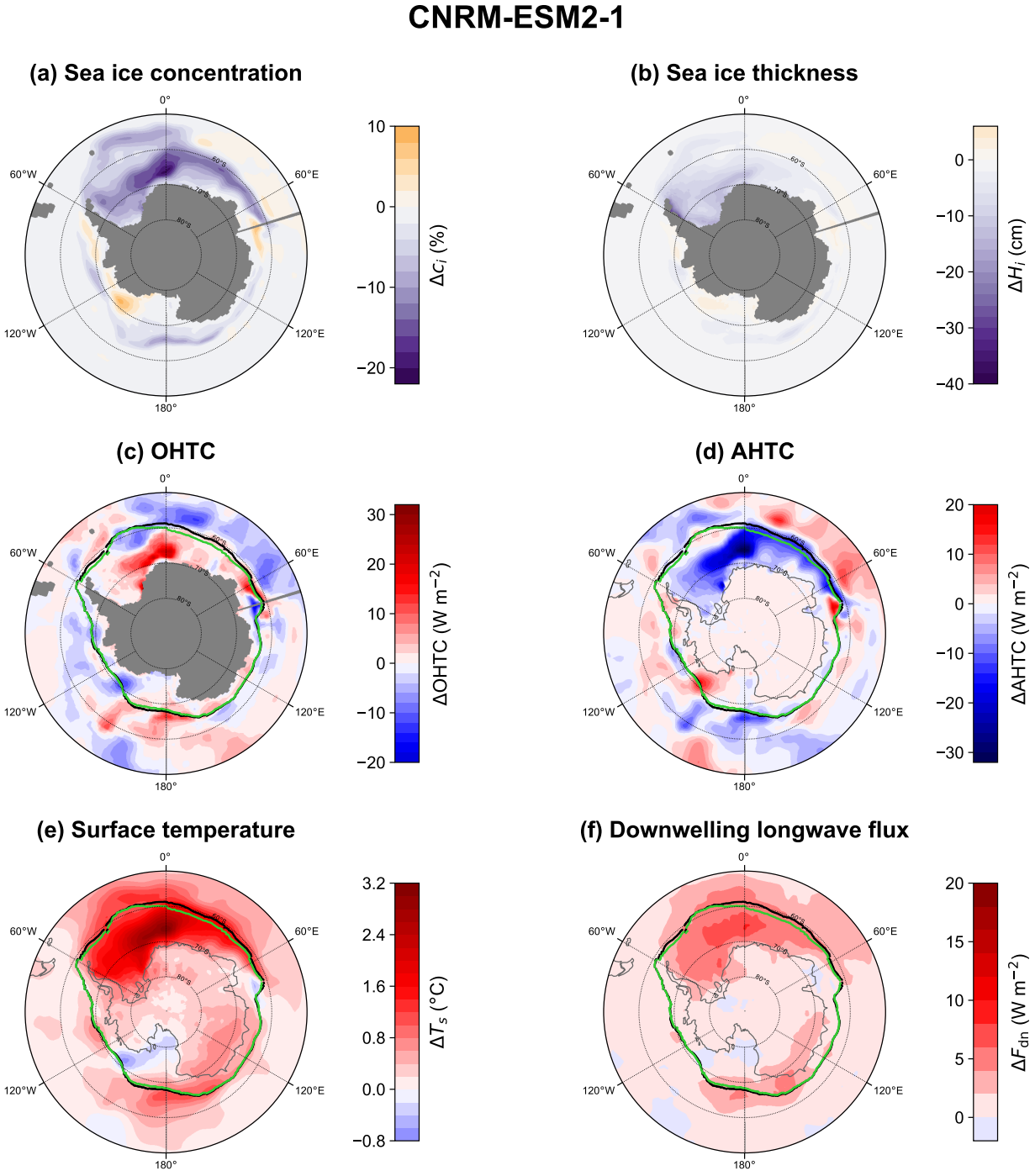


Fig. S2.22. As in Fig. S2.2 but for CNRM-ESM2-1. Minimum (maximum) 25 year mean sea ice edge occurs for the averages over years 100–125 (25–50) of the PI-control run

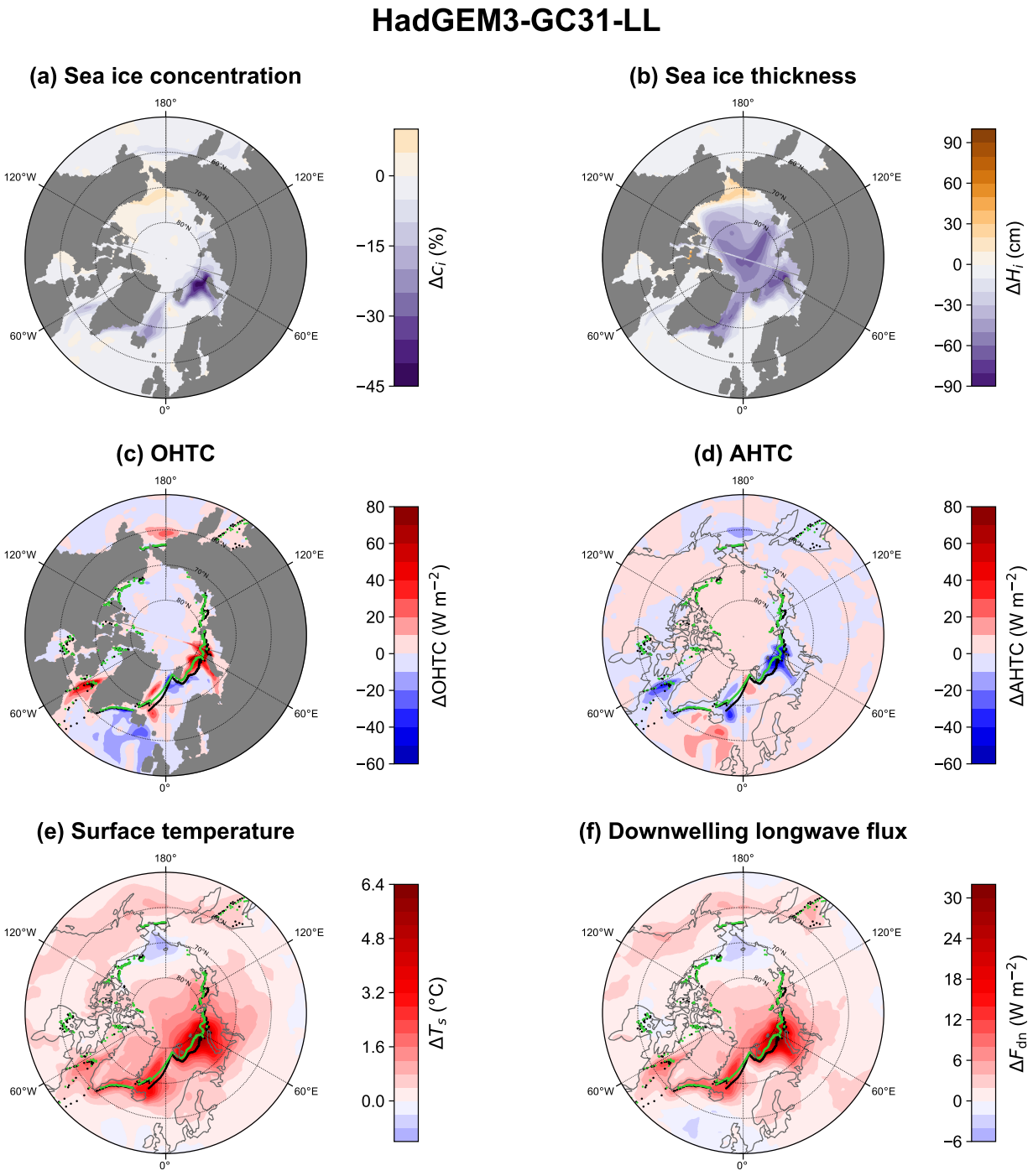


Fig. S2.23. As in Fig. S2.1 but for HadGEM3-GC31-LL. Minimum (maximum) 25 year mean sea ice edge occurs for the averages over years 150–175 (175–200) of the PI-control run

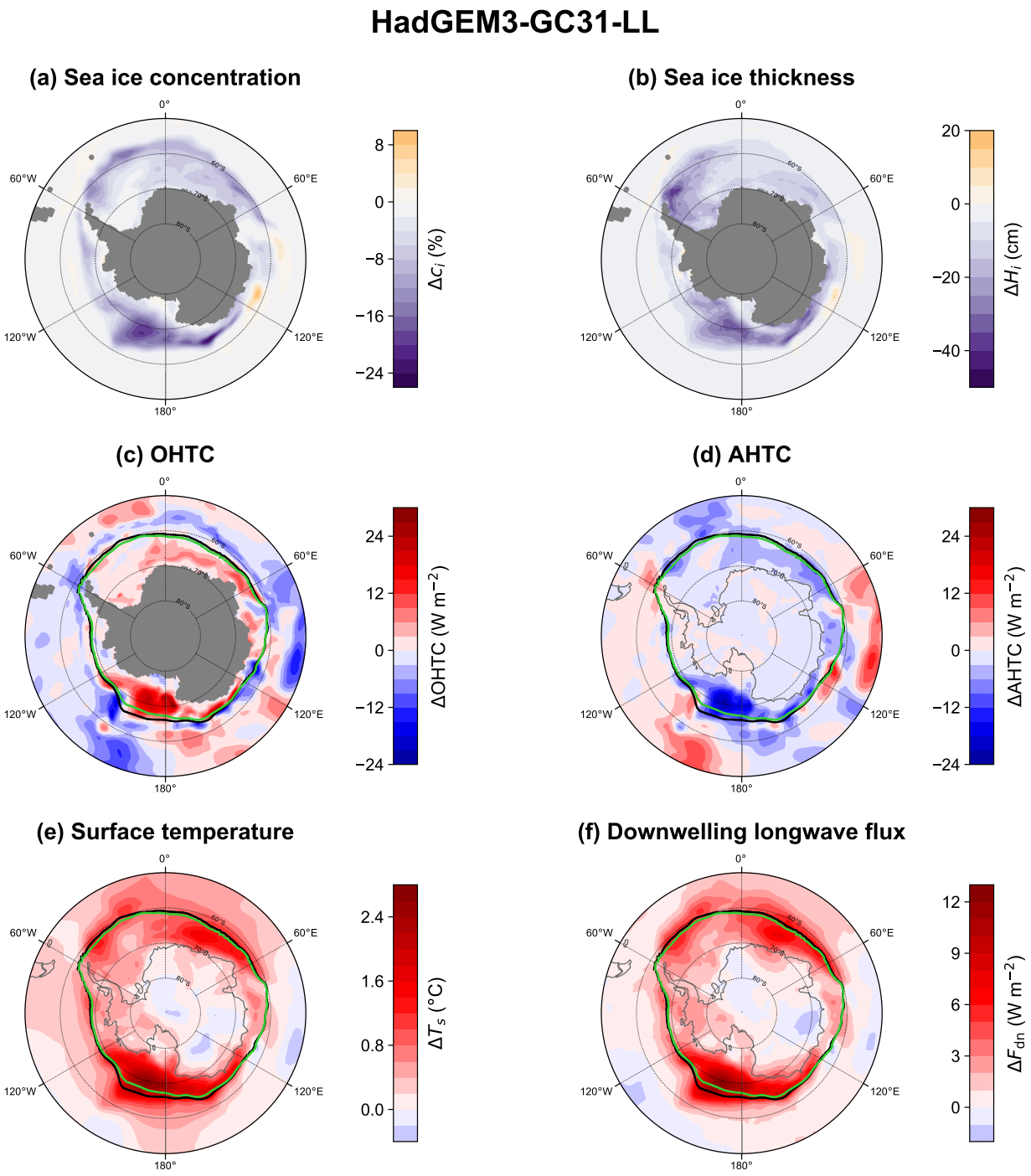


Fig. S2.24. As in Fig. S2.2 but for HadGEM3-GC31-LL. Minimum (maximum) 25 year mean sea ice edge occurs for the averages over years 150–175 (475–500) of the PI-control run

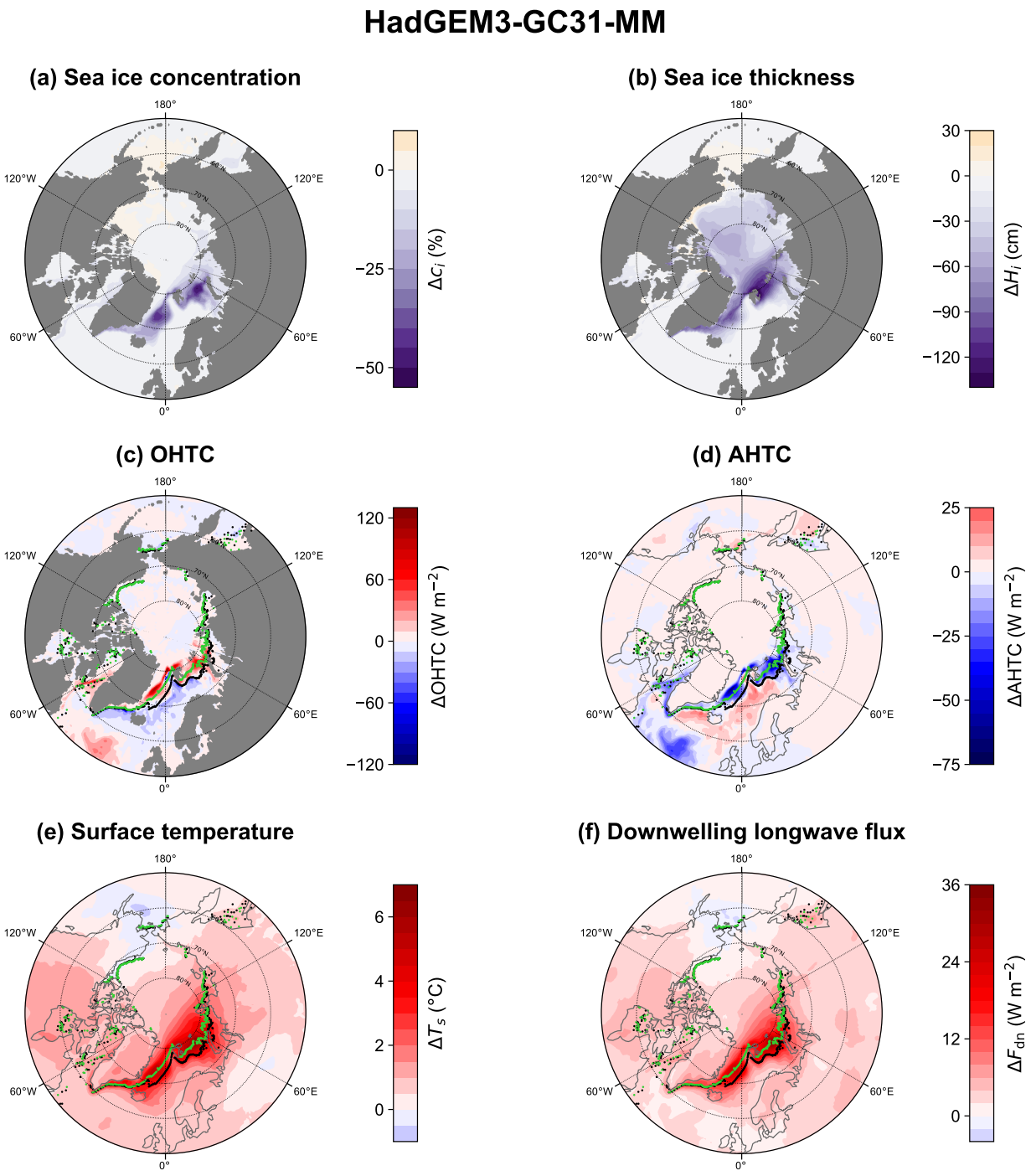


Fig. S2.25. As in Fig. S2.1 but for HadGEM3-GC31-MM. Minimum (maximum) 25 year mean sea ice edge occurs for the averages over years 75–100 (425–450) of the PI-control run

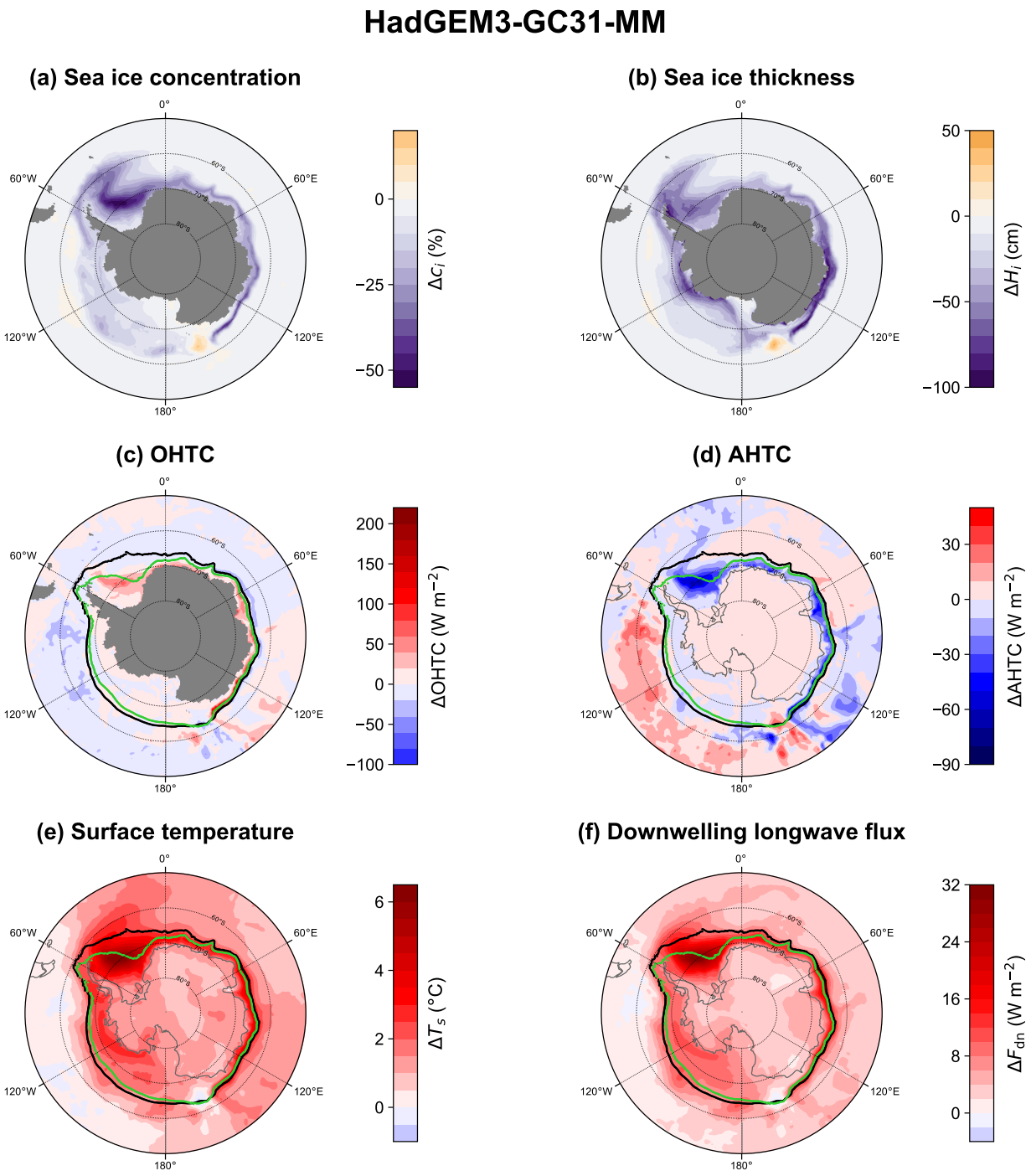


Fig. S2.26. As in Fig. S2.2 but for HadGEM3-GC31-MM. Minimum (maximum) 25 year mean sea ice edge occurs for the averages over years 25–50 (450–475) of the PI-control run

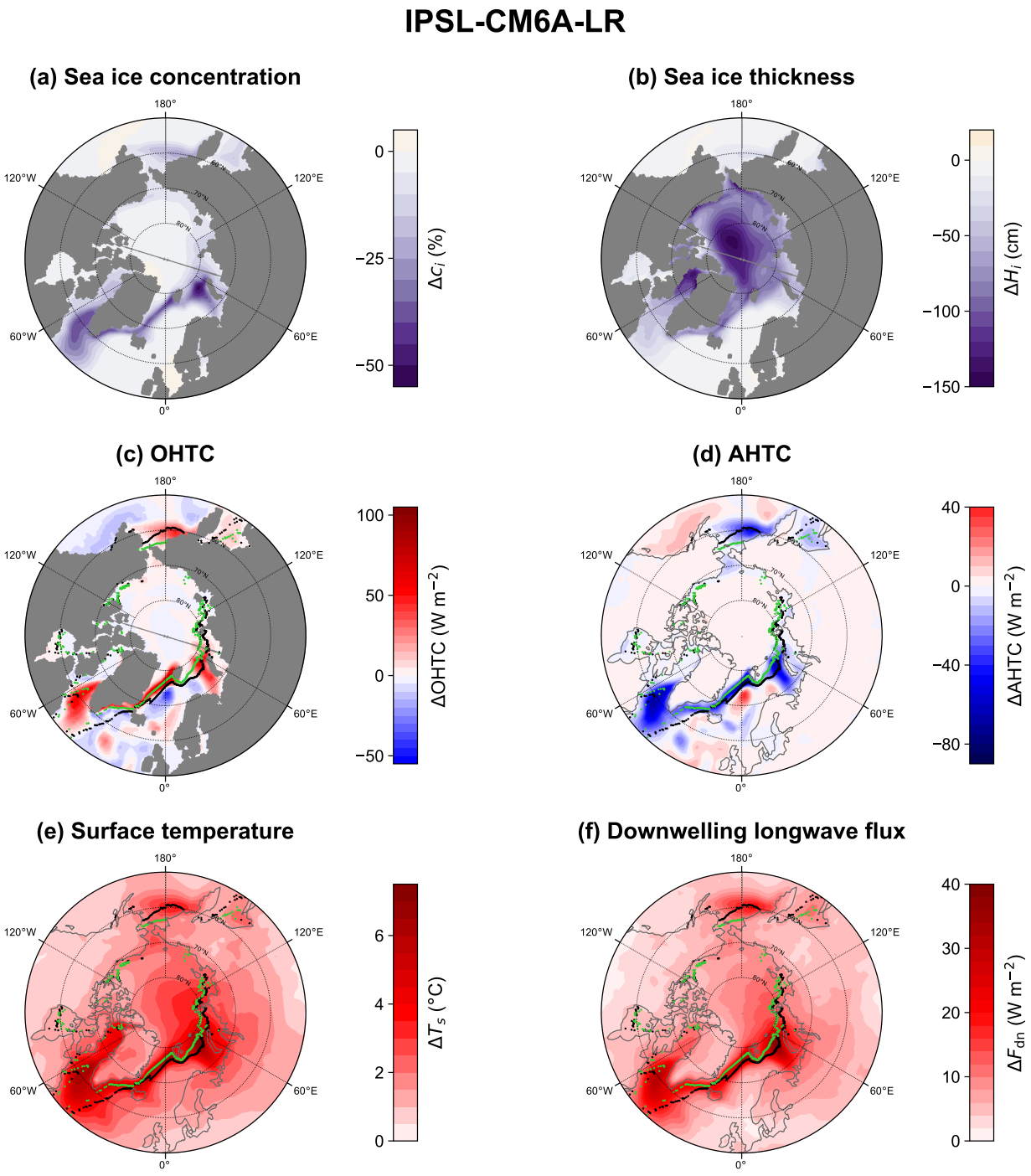


Fig. S2.27. As in Fig. S2.1 but for IPSL-CM6A-LR. Minimum (maximum) 25 year mean sea ice edge occurs for the averages over years 775–800 (625–650) of the PI-control run

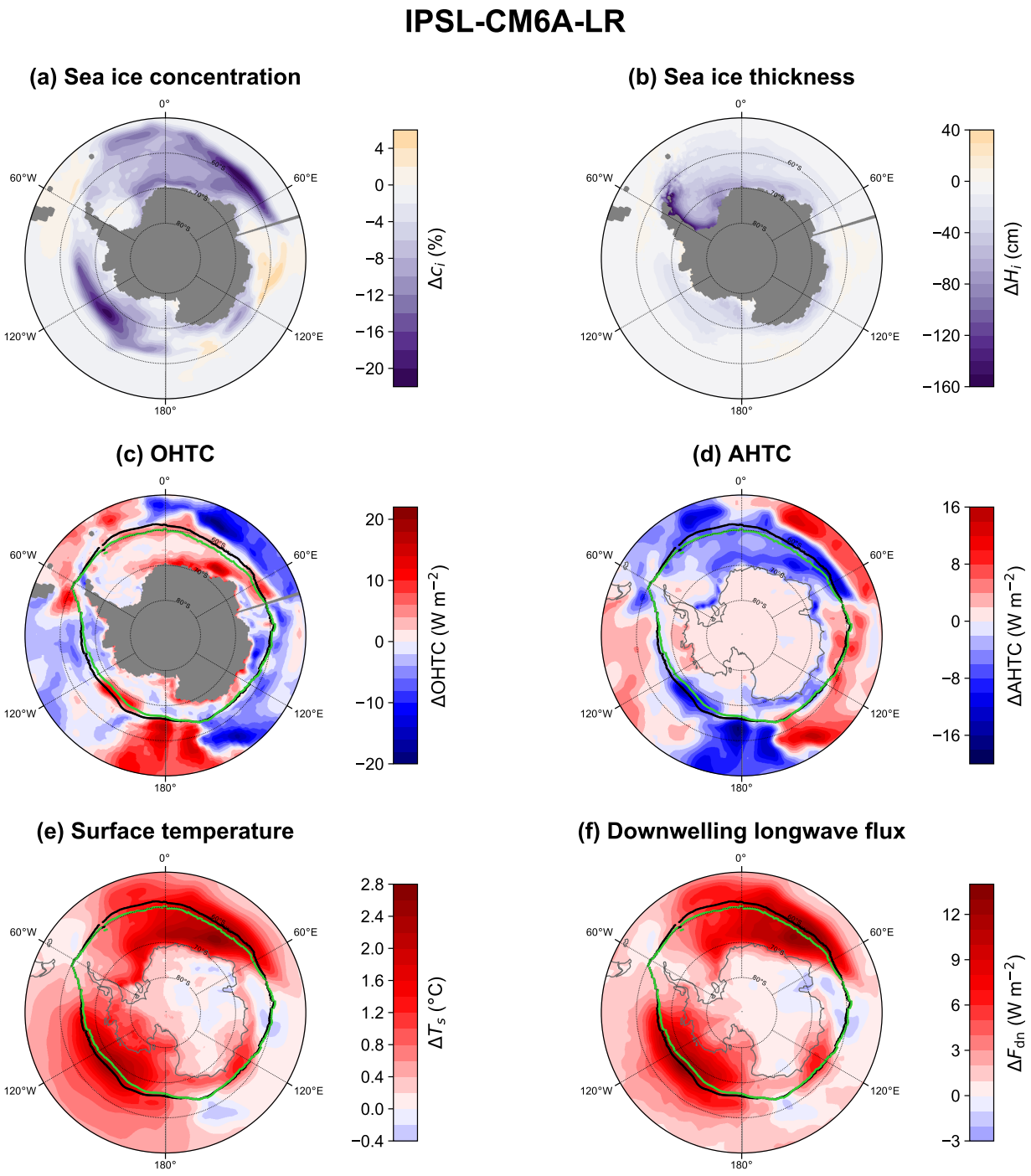


Fig. S2.28. As in Fig. S2.2 but for IPSL-CM6A-LR. Minimum (maximum) 25 year mean sea ice edge occurs for the averages over years 625–650 (0–25) of the PI-control run

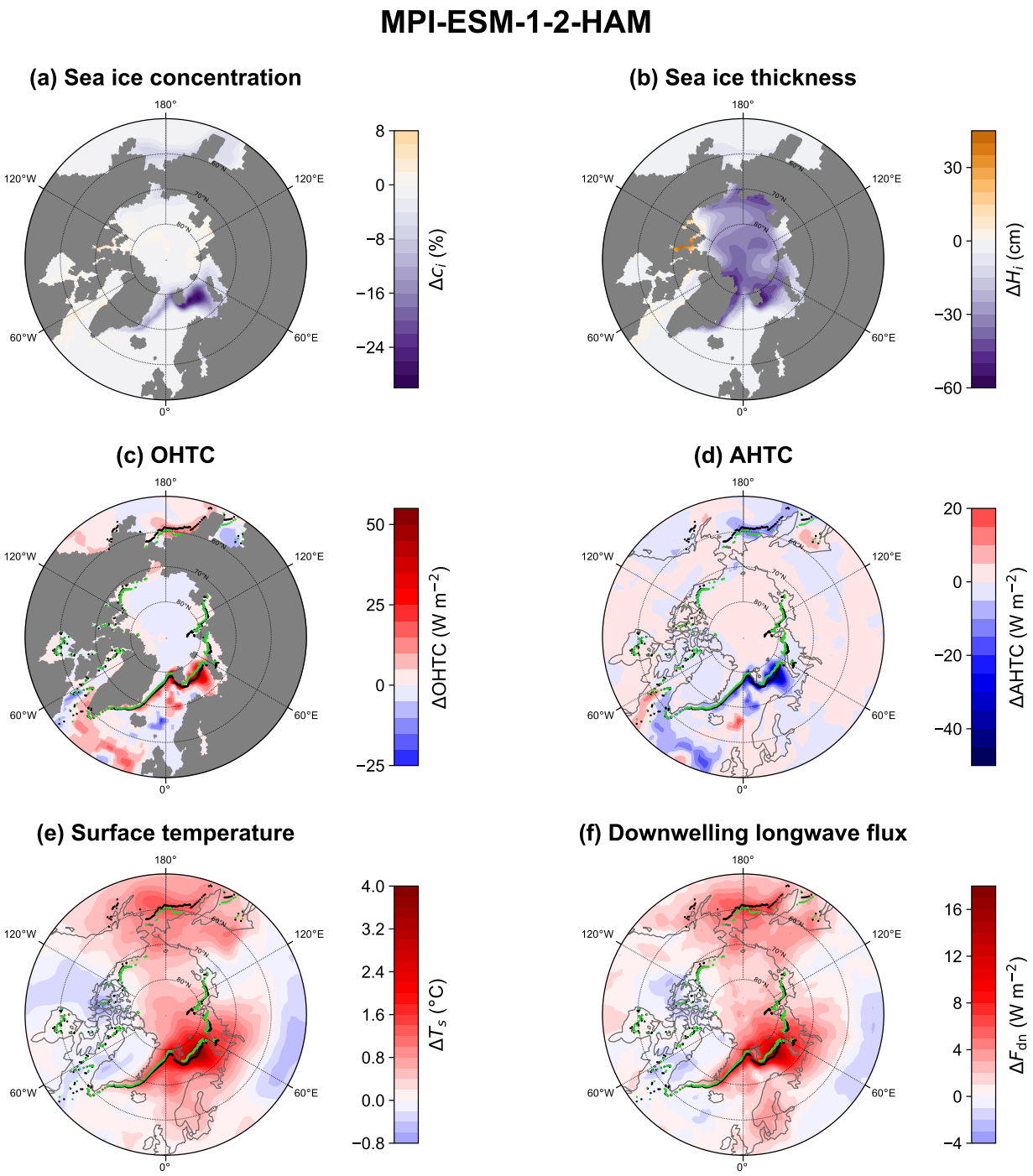


Fig. S2.29. As in Fig. S2.1 but for MPI-ESM-1-2-HAM. Minimum (maximum) 25 year mean sea ice edge occurs for the averages over years 700–725 (750–775) of the PI-control run

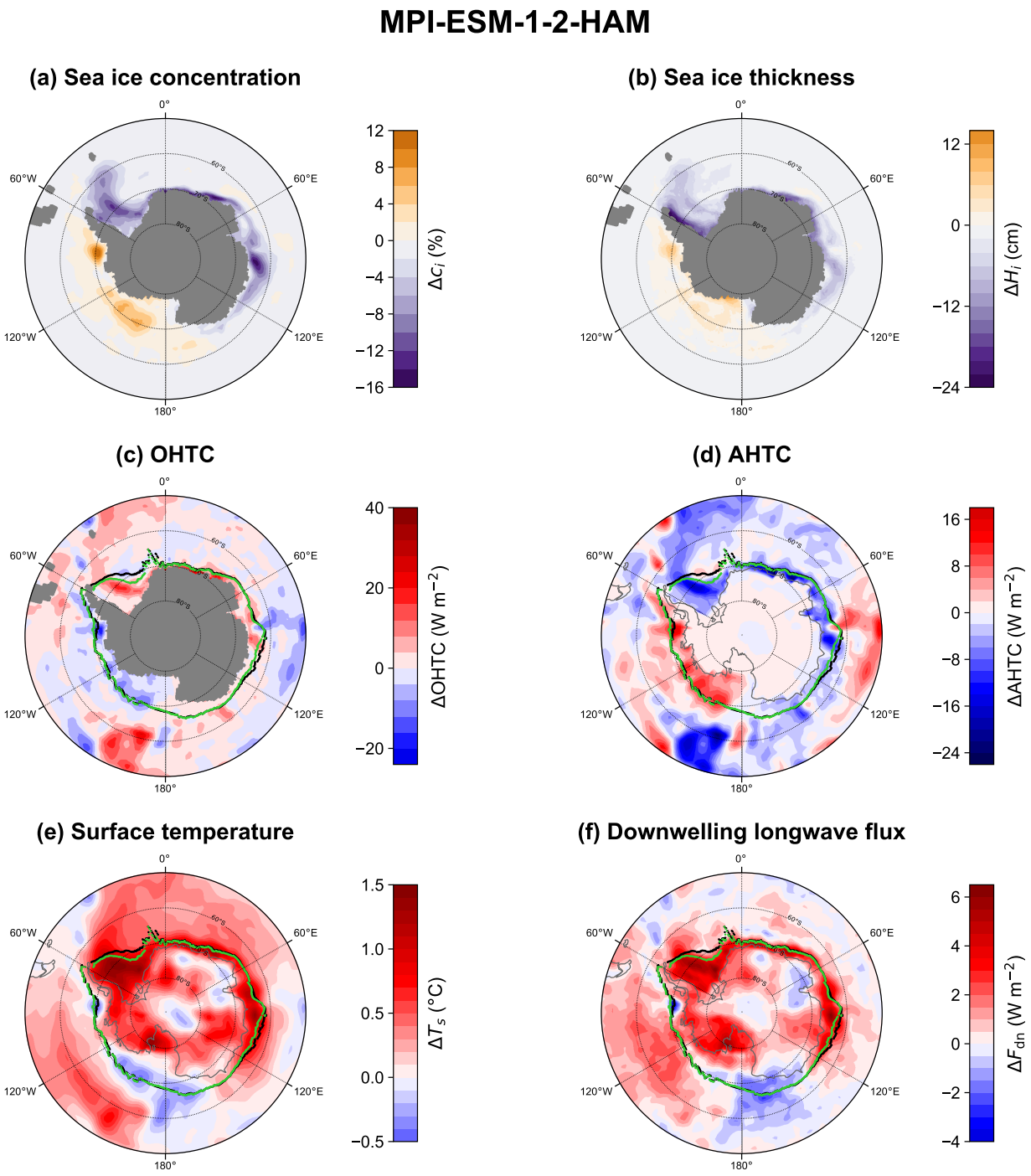


Fig. S2.30. As in Fig. S2.2 but for MPI-ESM-1-2-HAM. Minimum (maximum) 25 year mean sea ice edge occurs for the averages over years 625–650 (675–700) of the PI-control run

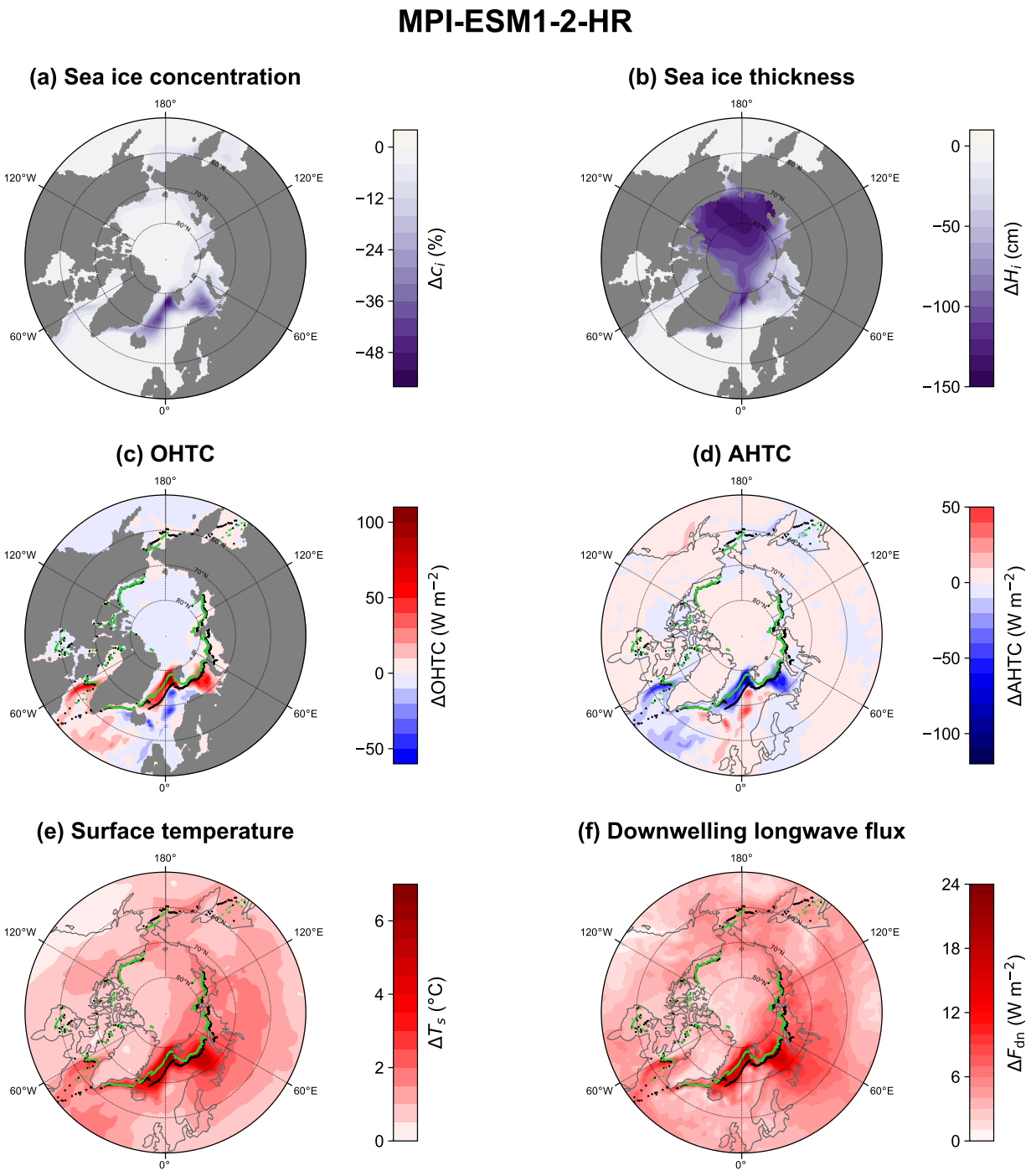


Fig. S2.31. As in Fig. S2.1 but for MPI-ESM1-2-HR. Minimum (maximum) 25 year mean sea ice edge occurs for the averages over years 275–300 (150–175) of the PI-control run

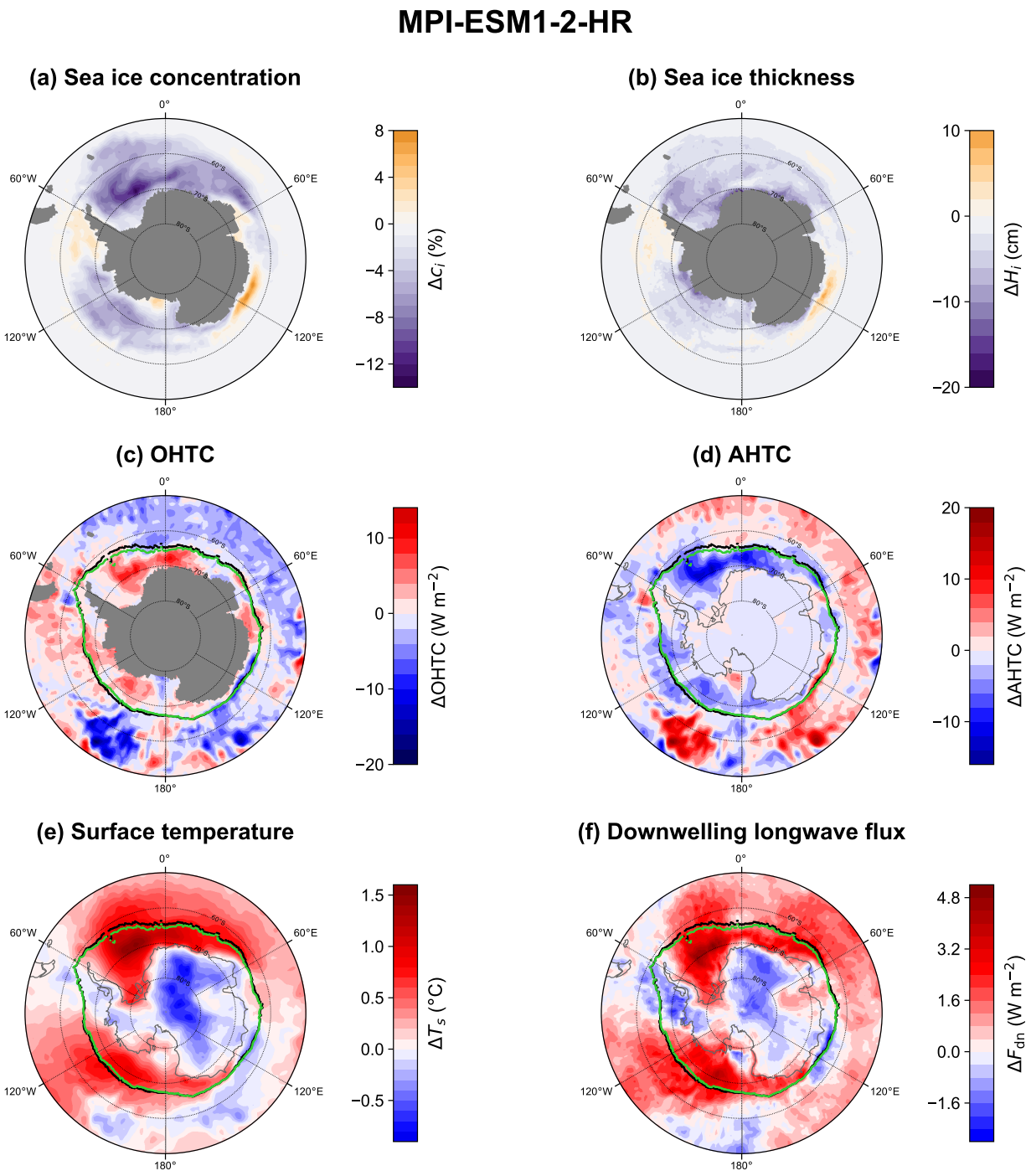


Fig. S2.32. As in Fig. S2.2 but for MPI-ESM1-2-HR. Minimum (maximum) 25 year mean sea ice edge occurs for the averages over years 75–100 (450–475) of the PI-control run

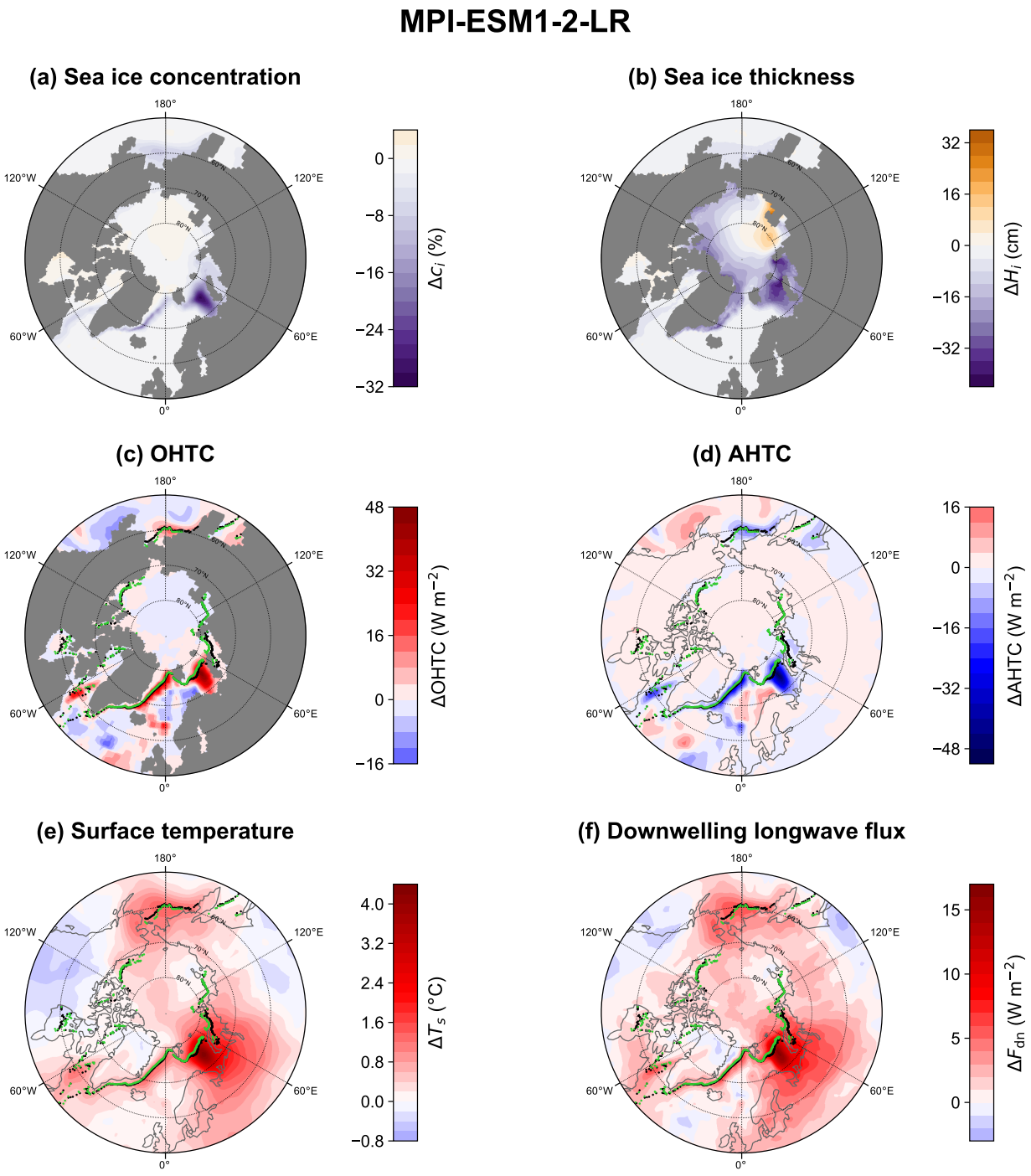


Fig. S2.33. As in Fig. S2.1 but for MPI-ESM1-2-LR. Minimum (maximum) 25 year mean sea ice edge occurs for the averages over years 575–600 (750–775) of the PI-control run

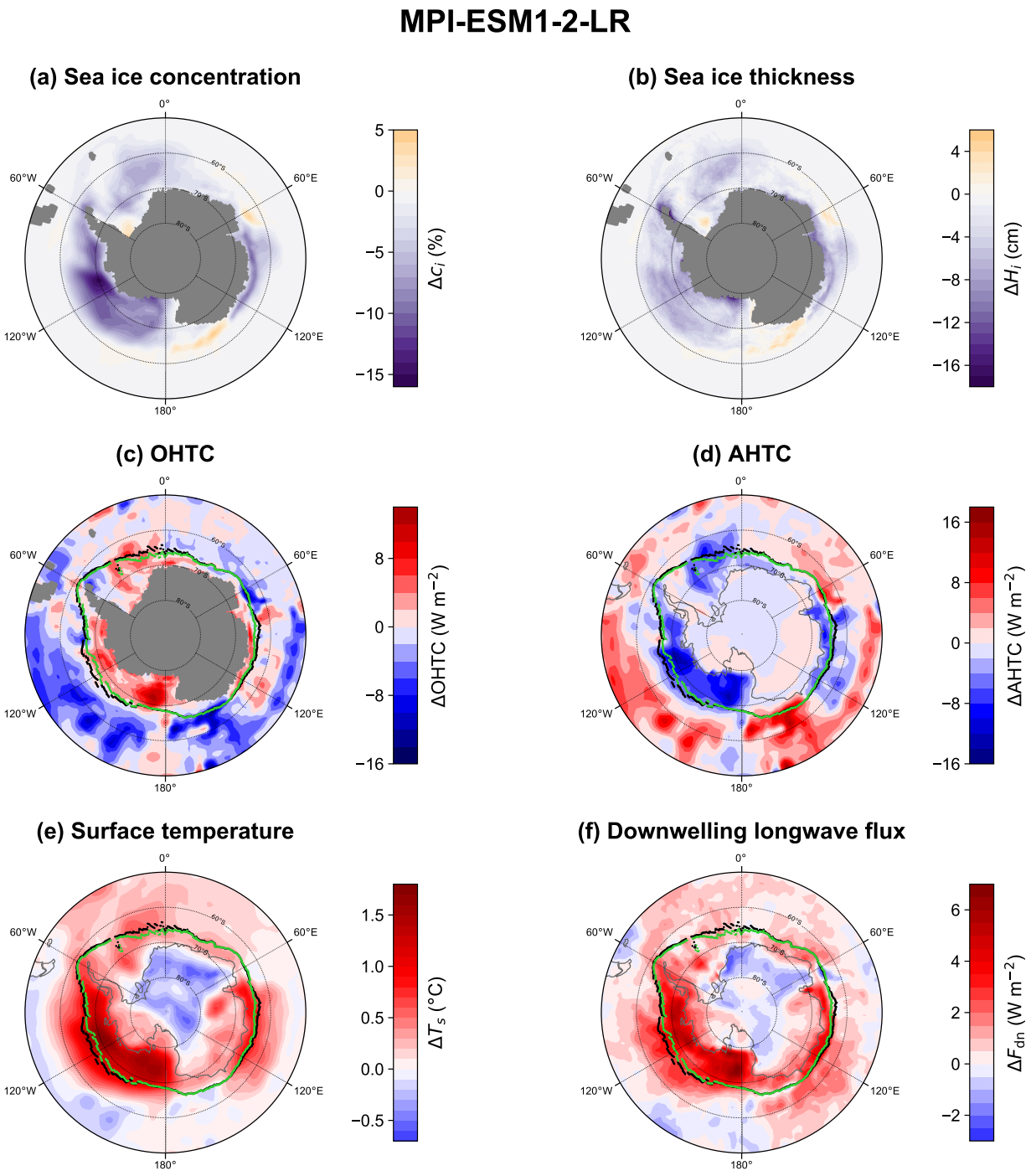


Fig. S2.34. As in Fig. S2.2 but for MPI-ESM1-2-LR. Minimum (maximum) 25 year mean sea ice edge occurs for the averages over years 175–200 (225–250) of the PI-control run

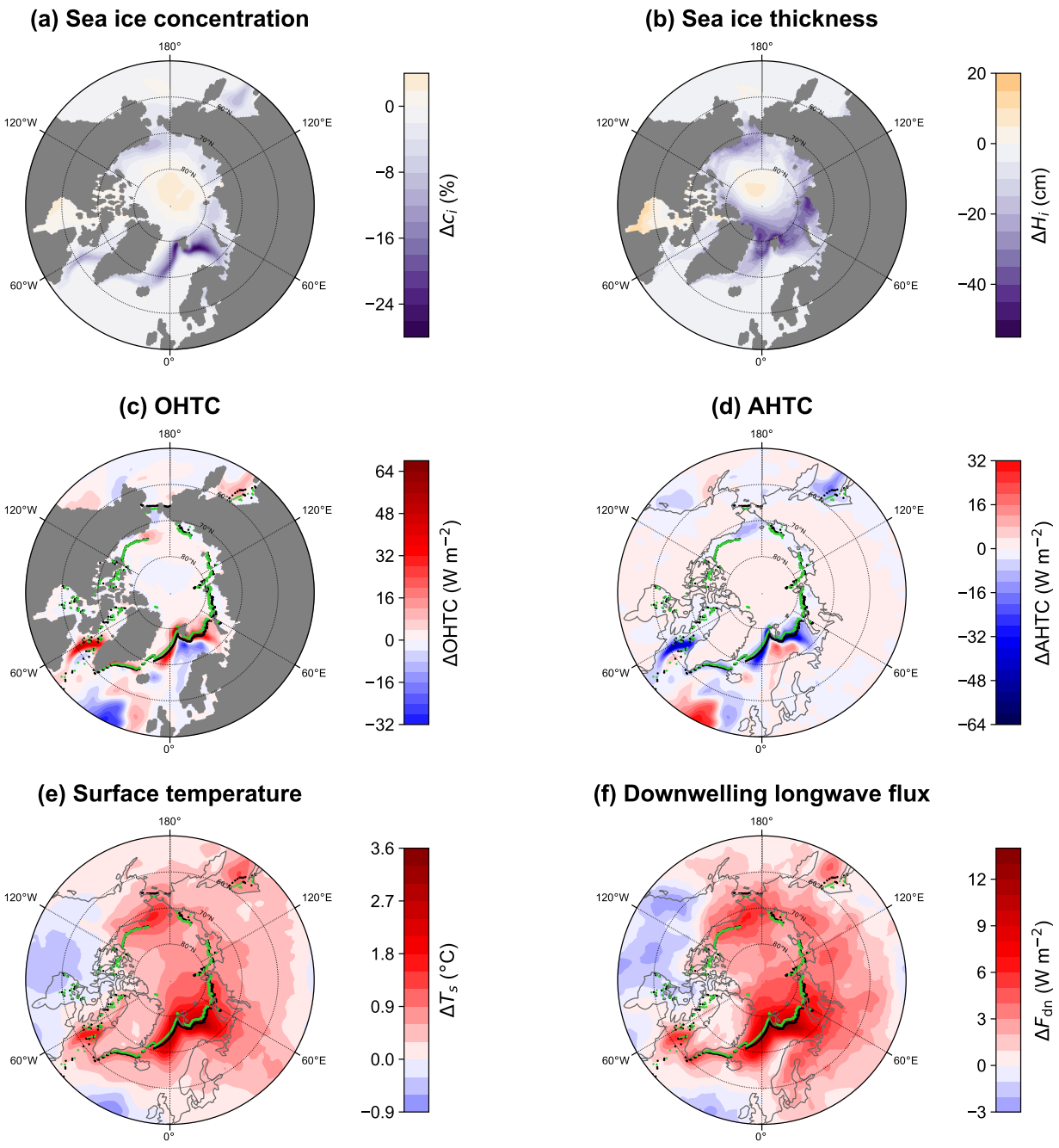


Fig. S2.35. As in Fig. S2.1 but for MRI-ESM2-0. Minimum (maximum) 25 year mean sea ice edge occurs for the averages over years 450–475 (125–150) of the PI-control run

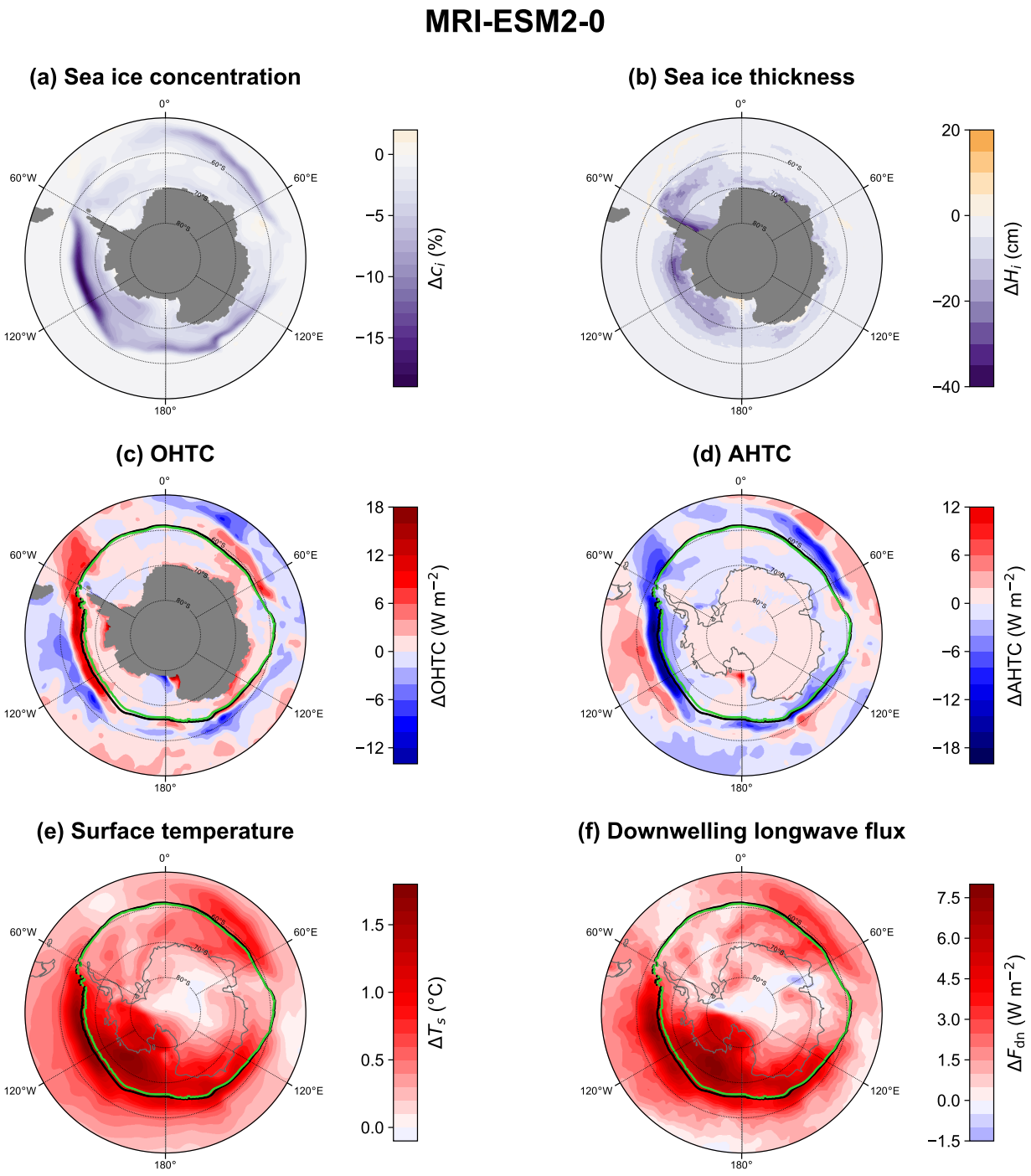


Fig. S2.36. As in Fig. S2.2 but for MRI-ESM2-0. Minimum (maximum) 25 year mean sea ice edge occurs for the averages over years 0–25 (600–625) of the PI-control run

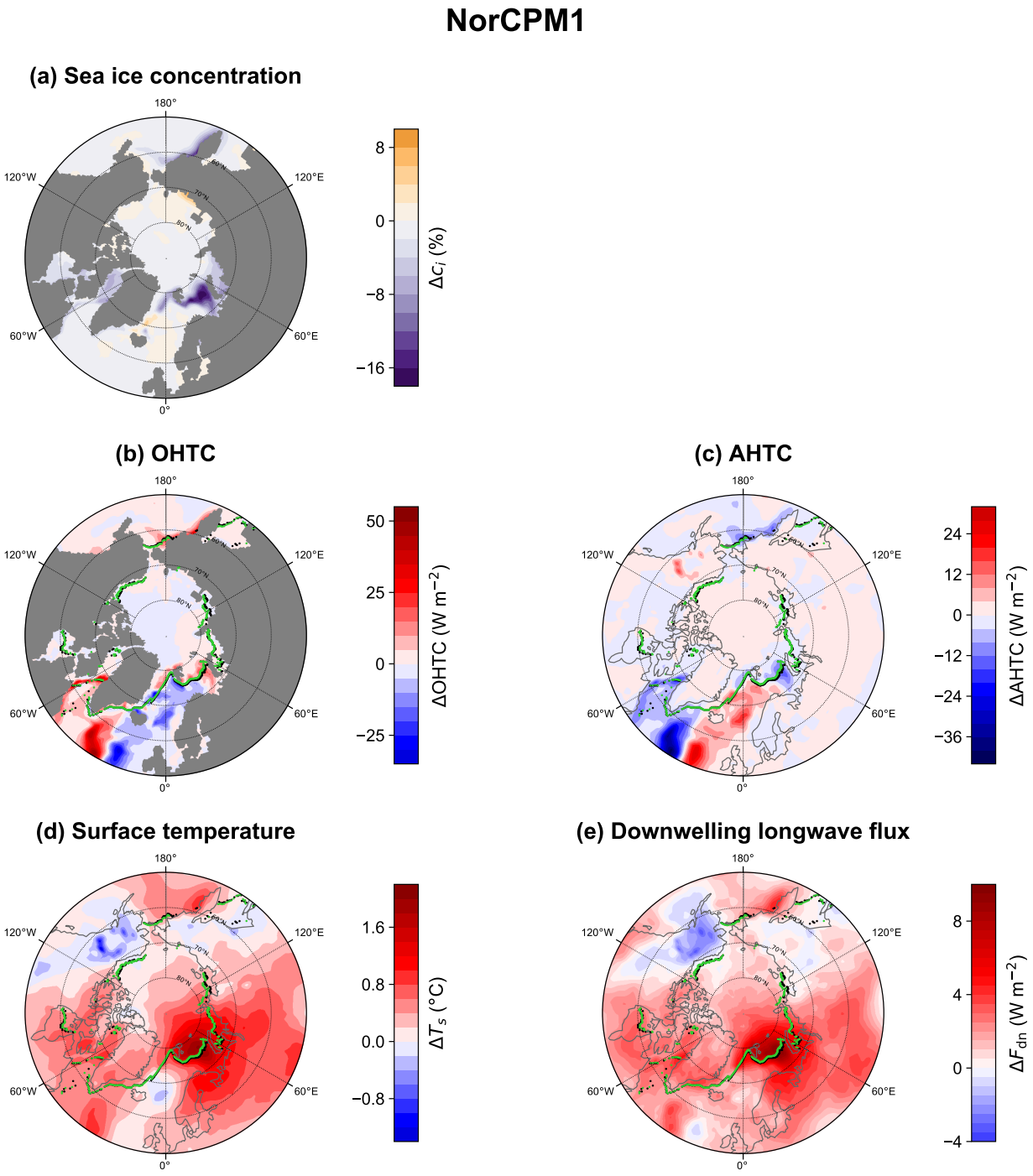


Fig. S2.37. As in Fig. S2.1 but for NorCPM1. Raw data required to produce sea ice thickness was not available for this model. Minimum (maximum) 25 year mean sea ice edge occurs for the averages over years 25–50 (450–475) of the PI-control run

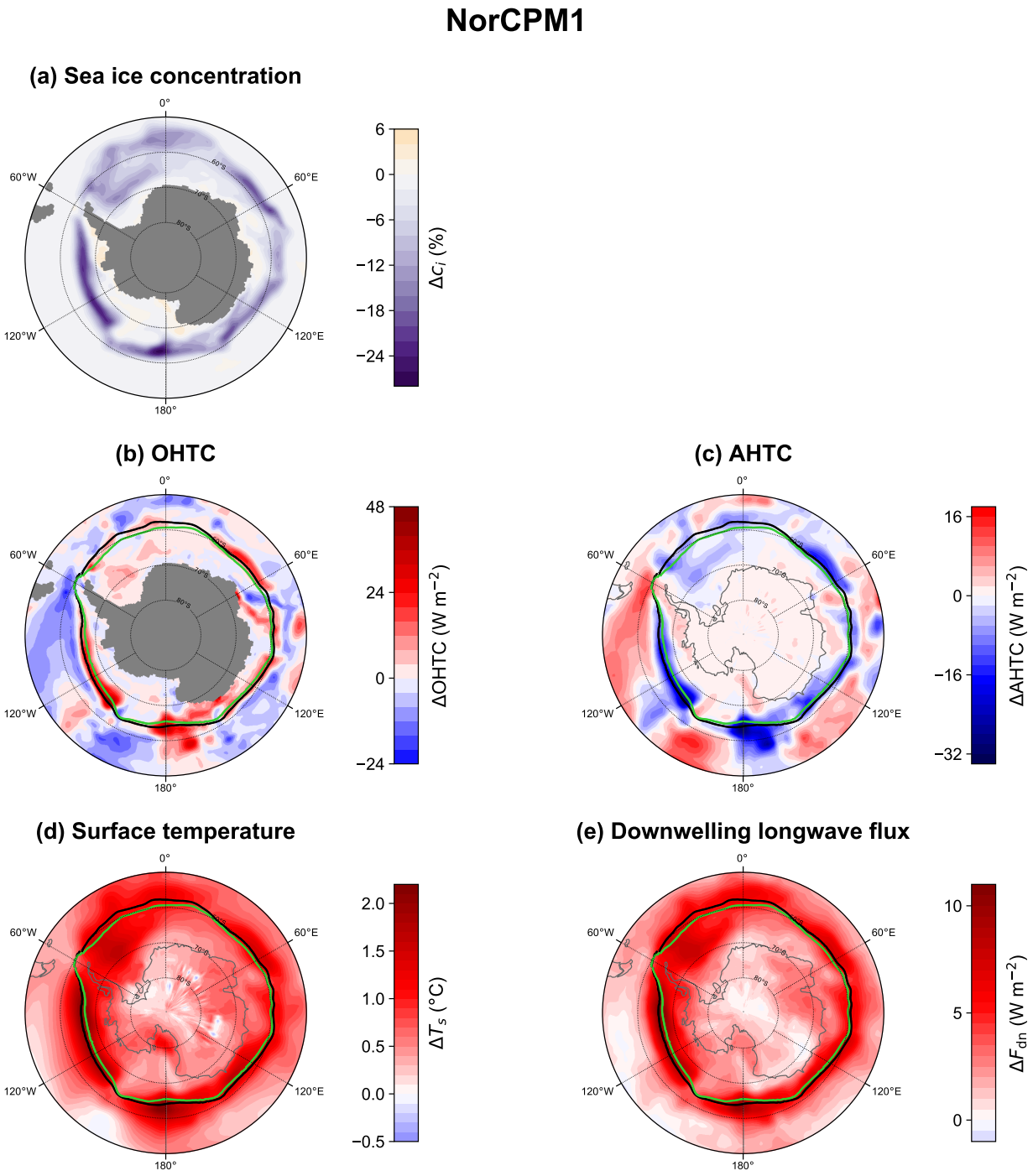


Fig. S2.38. As in Fig. S2.2 but for NorCPM1. Raw data required to produce sea ice thickness was not available for this model. Minimum (maximum) 25 year mean sea ice edge occurs for the averages over years 0–25 (475–500) of the PI-control run

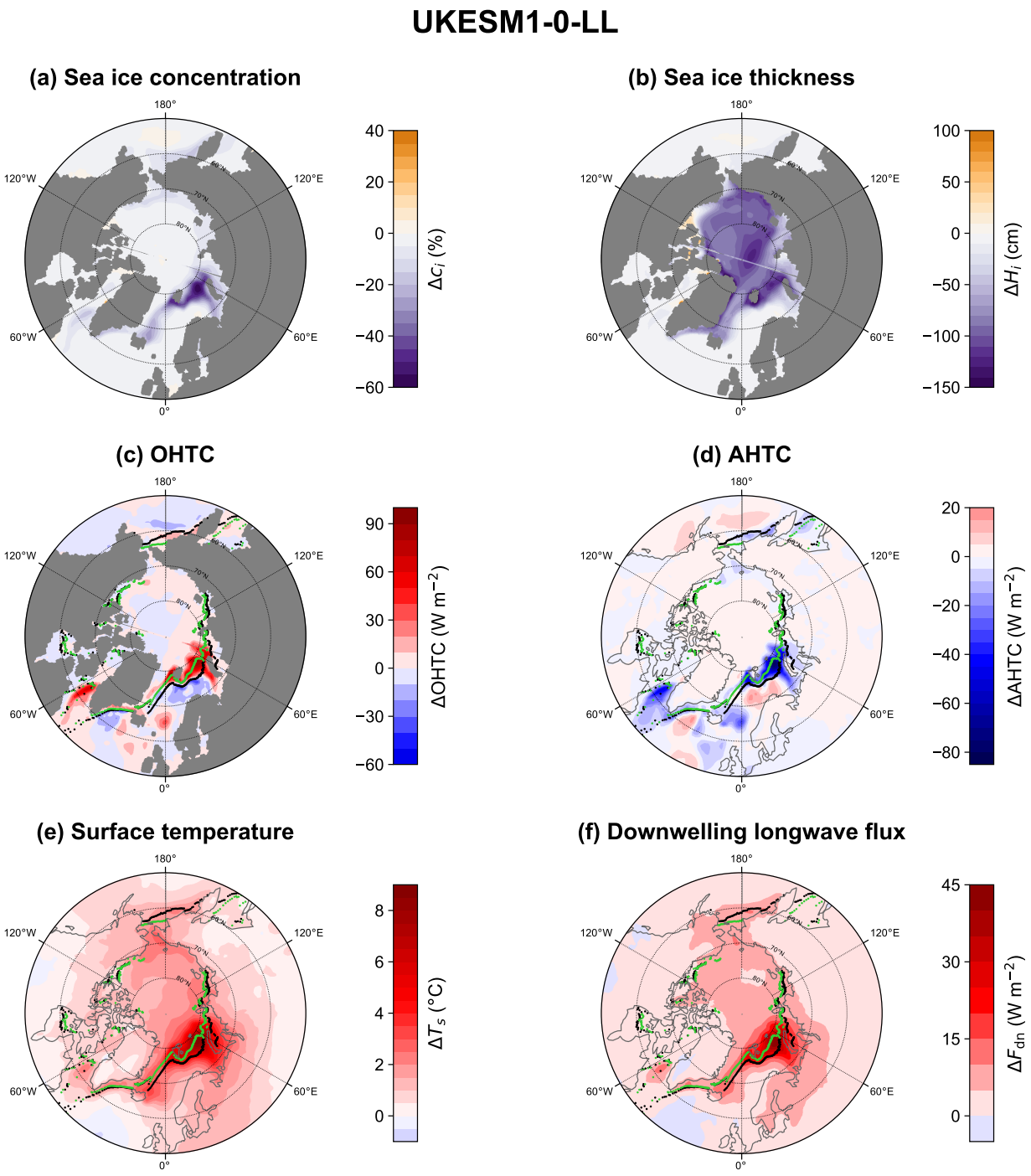


Fig. S2.39. As in Fig. S2.1 but for UKESM1-0-LL. Minimum (maximum) 25 year mean sea ice edge occurs for the averages over years 1200–1225 (1550–1575) of the PI-control run

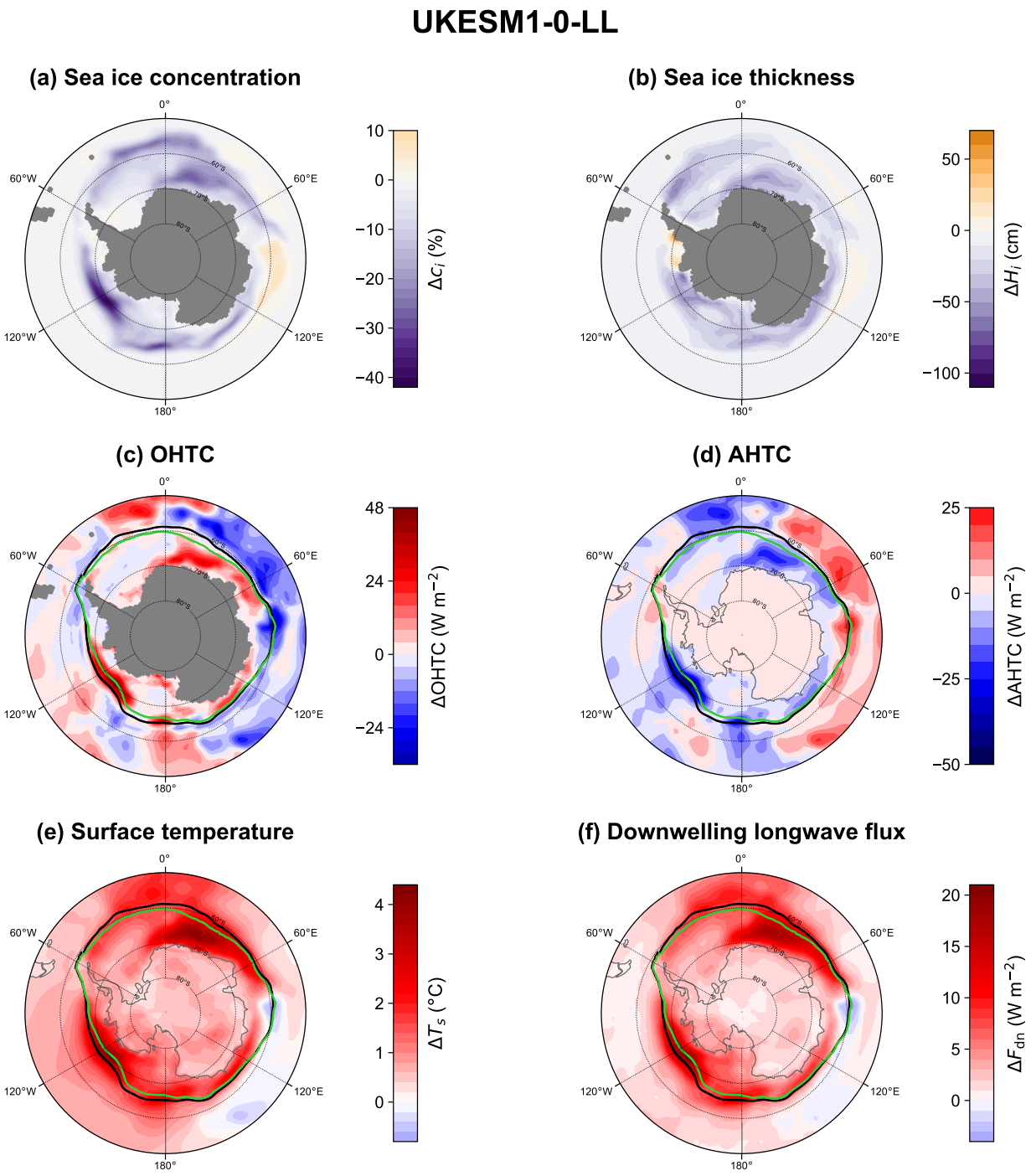


Fig. S2.40. As in Fig. S2.2 but for UKESM1-0-LL. Minimum (maximum) 25 year mean sea ice edge occurs for the averages over years 1350–1375 (850–875) of the PI-control run

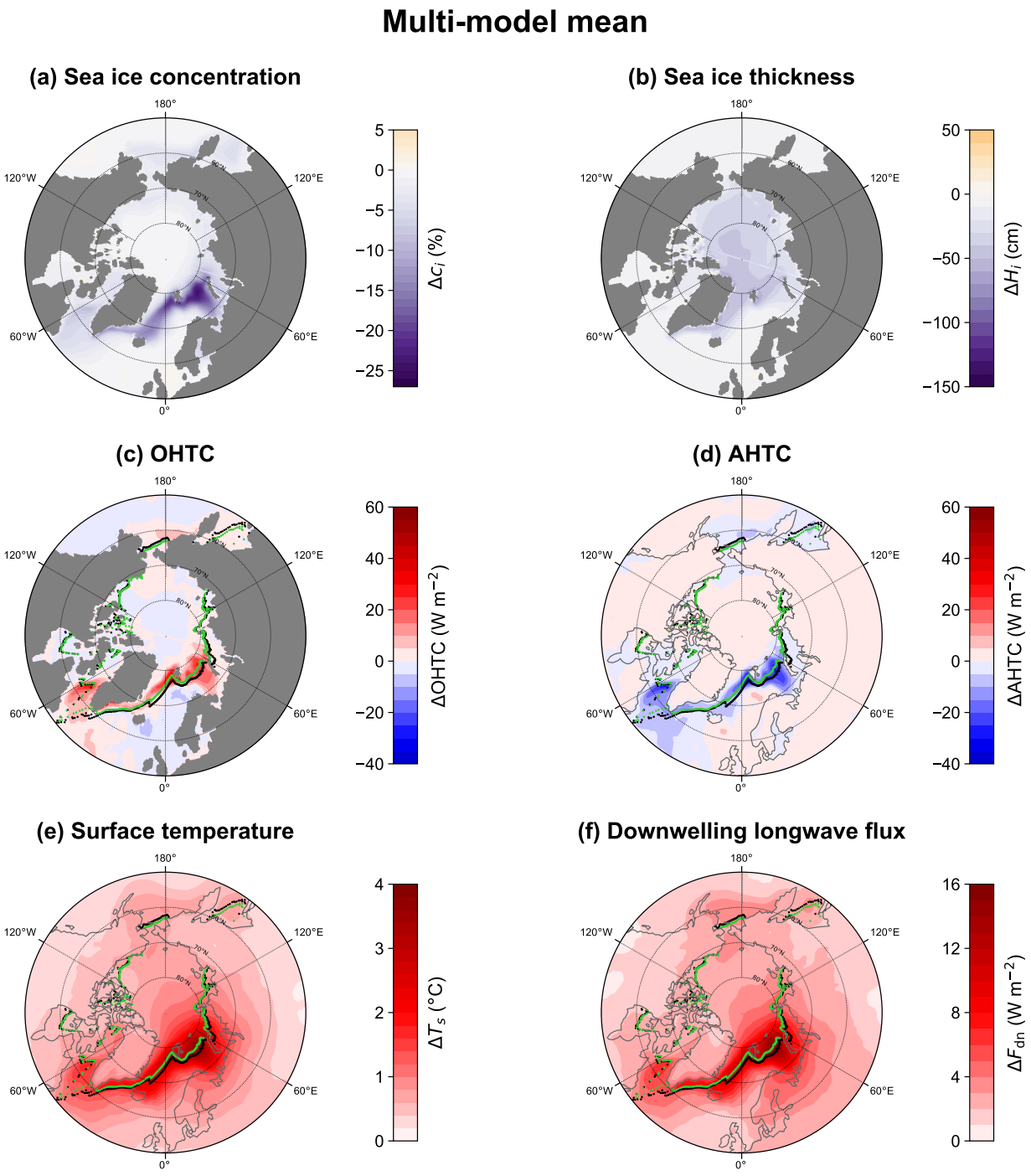


Fig. S2.41. As in Fig. S2.1 but for the multi-model mean, i.e., each quantity is the average of the corresponding panel of the odd-numbered figures in this document

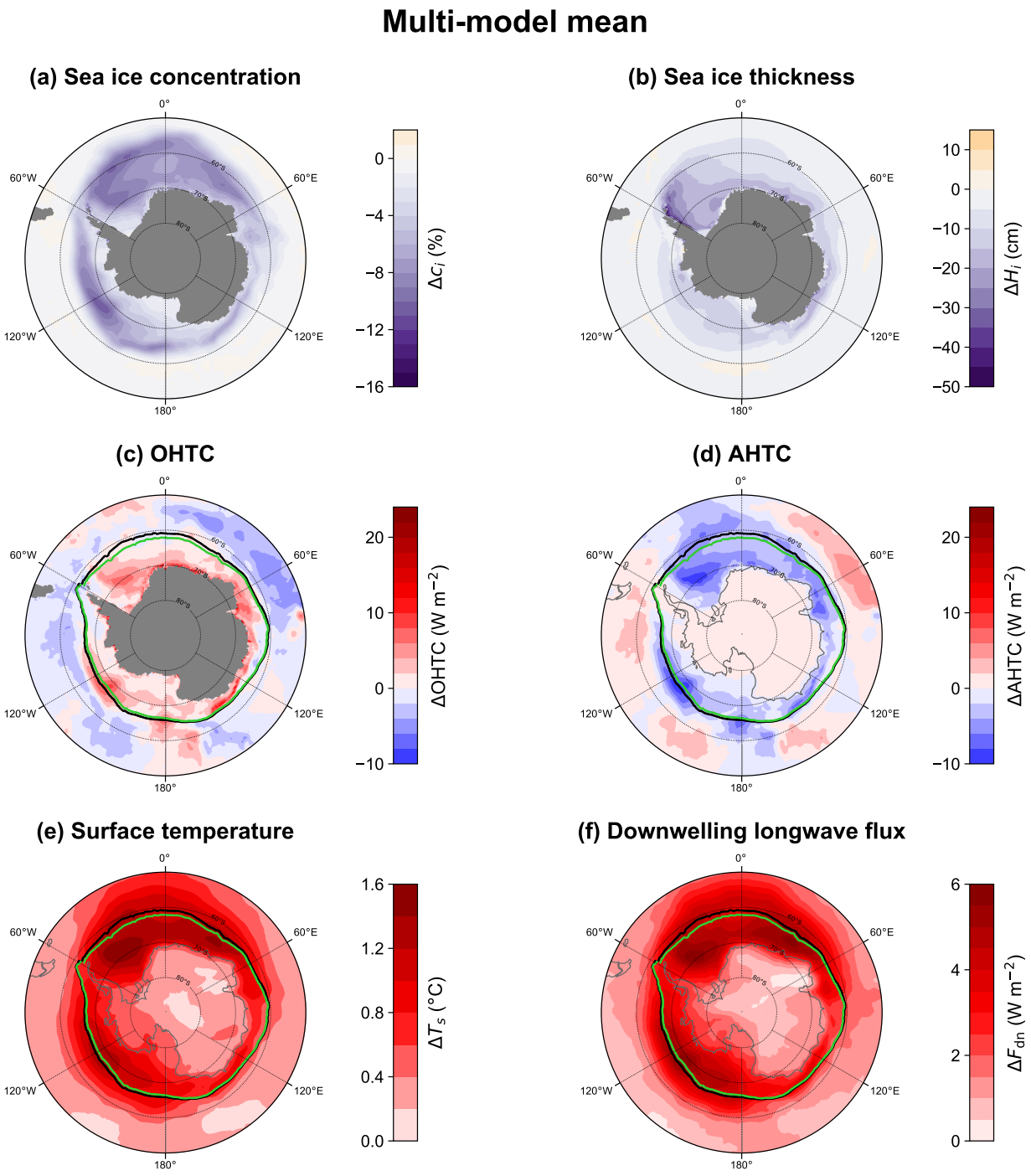


Fig. S2.42. As in Fig. S2.2 but for the multi-model mean, i.e., each quantity is the average of the corresponding panel of the even-numbered figures in this document