

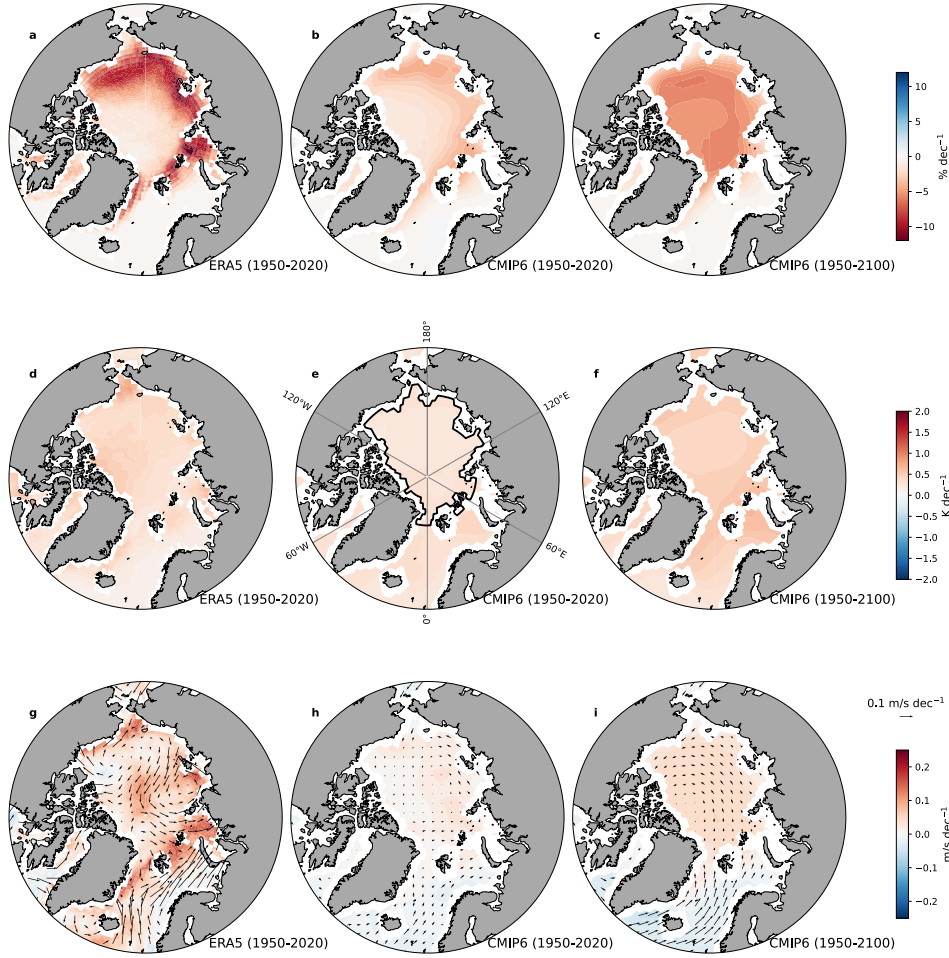


Figure 1: Arctic summer (JAS) mean trends in sea-ice concentration (top row), 2-meter temperature (middle row), and 10-meter wind speed (bottom row) based on ERA5 (left column) and the CMIP6 multi-model mean (middle and right columns) for the periods 1950–2020 (left and middle columns) and 1950–2100 (right column). The mask for spatial averages is delineated in panel e.

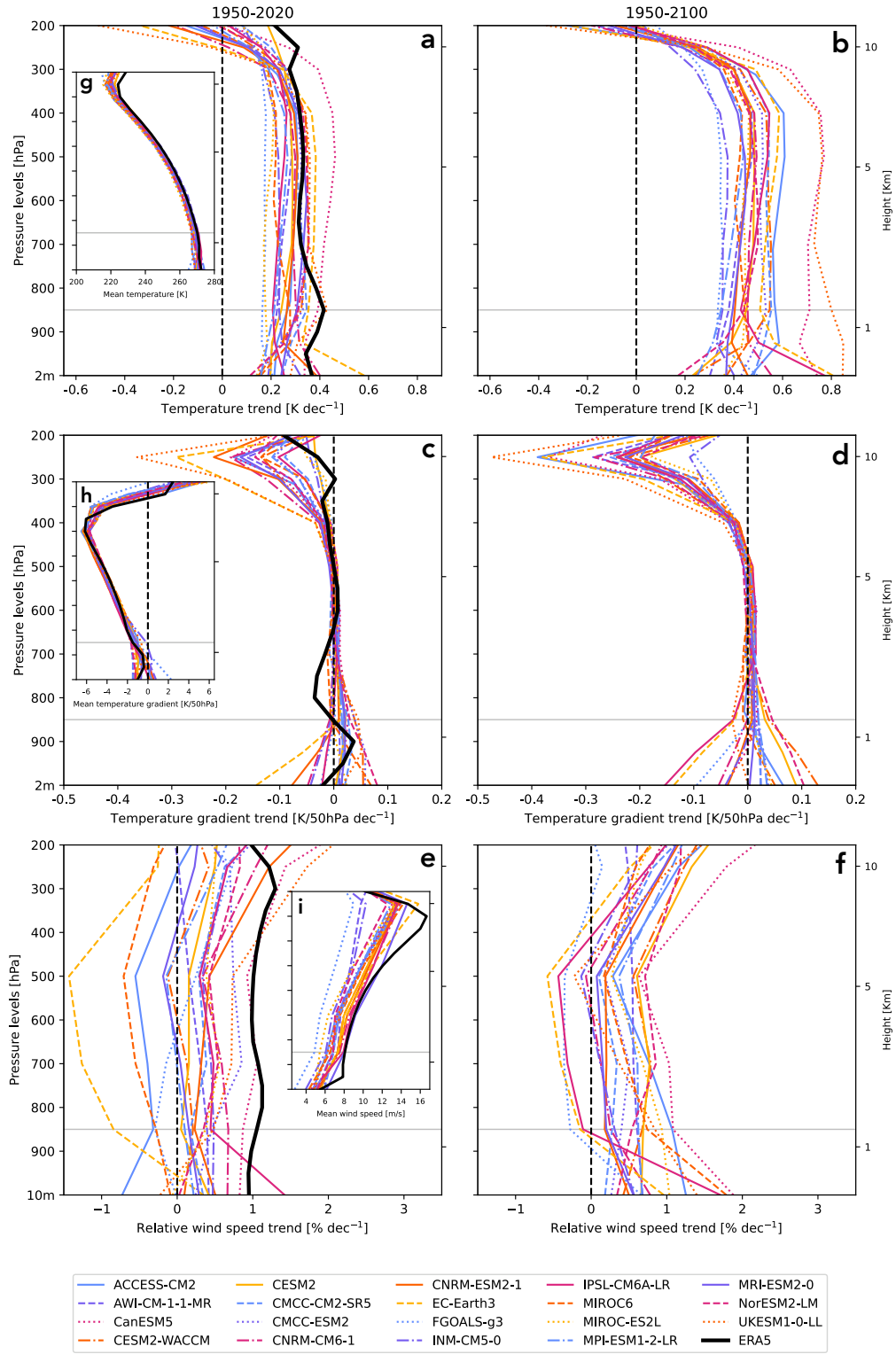


Figure 2: Vertical profiles of Arctic Ocean summer (JAS) mean trends in air temperature (top row), vertical temperature gradient (middle row), and wind speed (bottom row) for 1950–2020 (left column) and 1950–2100 (right column). Insets (g, h, and i) show the corresponding mean profiles for 1950–2020.

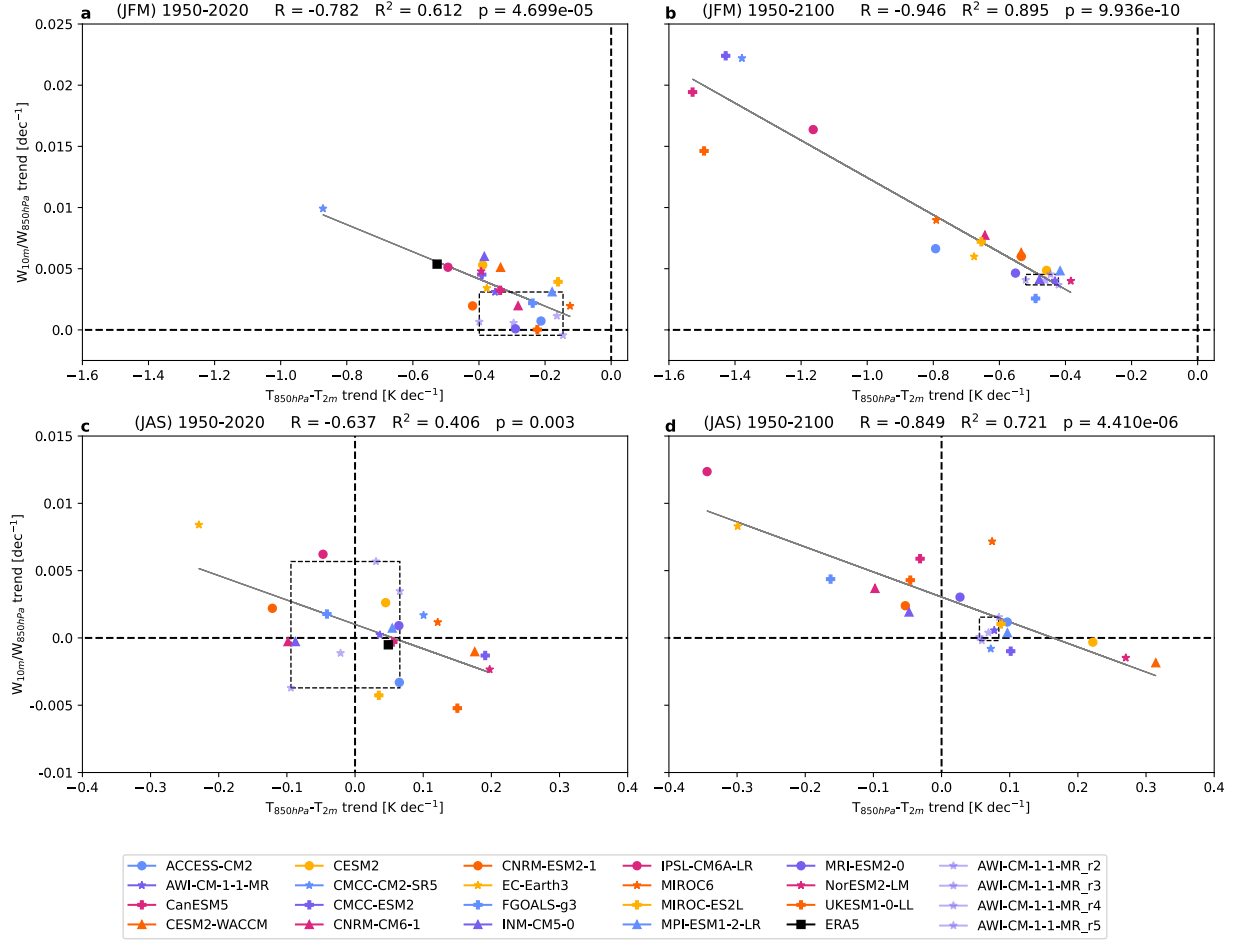


Figure 3: Wind-speed ratio versus temperature difference between near-surface and 850 hPa levels in winter (JFM, a and b) and summer (JAS, c and d), for the periods 1950–2020 (a and c) and 1950–2100 (b and d). Black dashed squares denote the AWI-CM-1-1-MR ensemble spread.

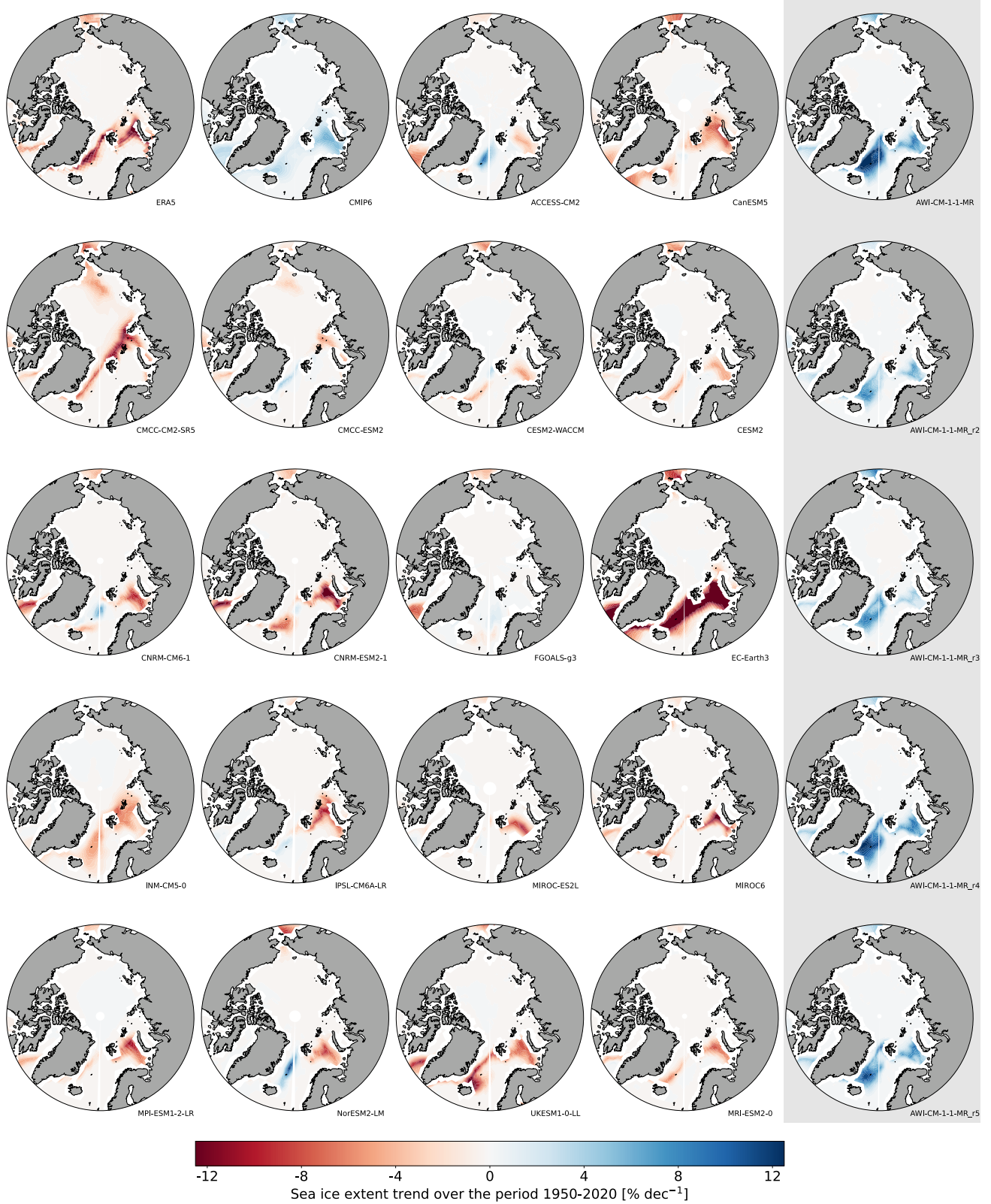


Figure 4: Arctic winter (JFM) mean sea ice concentration trend based on ERA5, CMIP6 multi-model mean and individually all CMIP6 climate models included in the study. In the rightmost column the five AWI-CM-1-1-MR ensemble members are also reported.



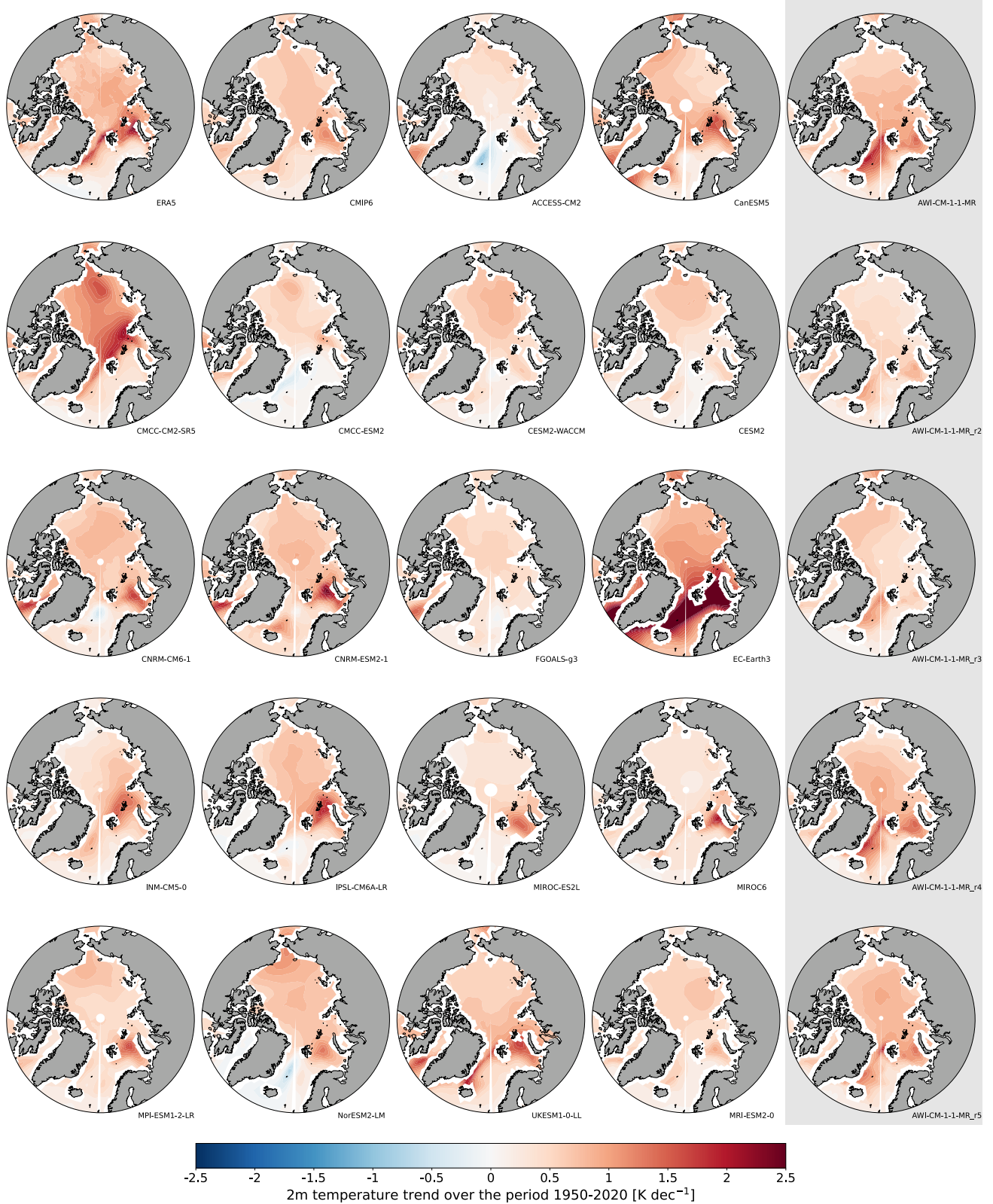


Figure 5: Arctic winter (JFM) mean 2-meters temperature trend based on ERA5, CMIP6 multi-model mean and individually all CMIP6 climate models included in the study. In the rightmost column the five AWI-CM-1-1-MR ensemble members are also reported.

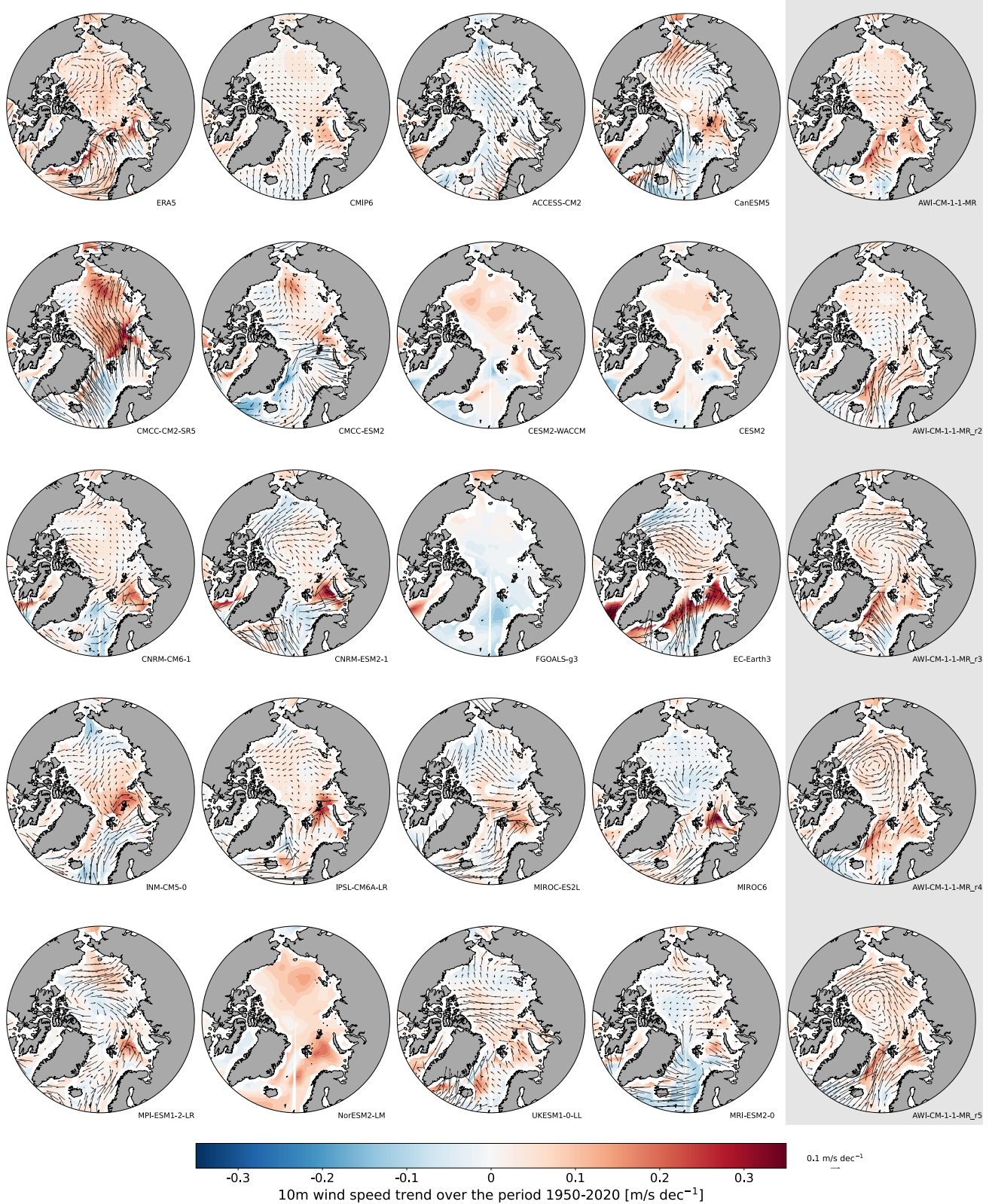


Figure 6: Arctic winter (JFM) mean 10-meters wind speed trend based on ERA5, CMIP6 multi-model mean and individually all CMIP6 climate models included in the study. In the rightmost column the five AWI-CM-1-1-MR ensemble members are also reported.

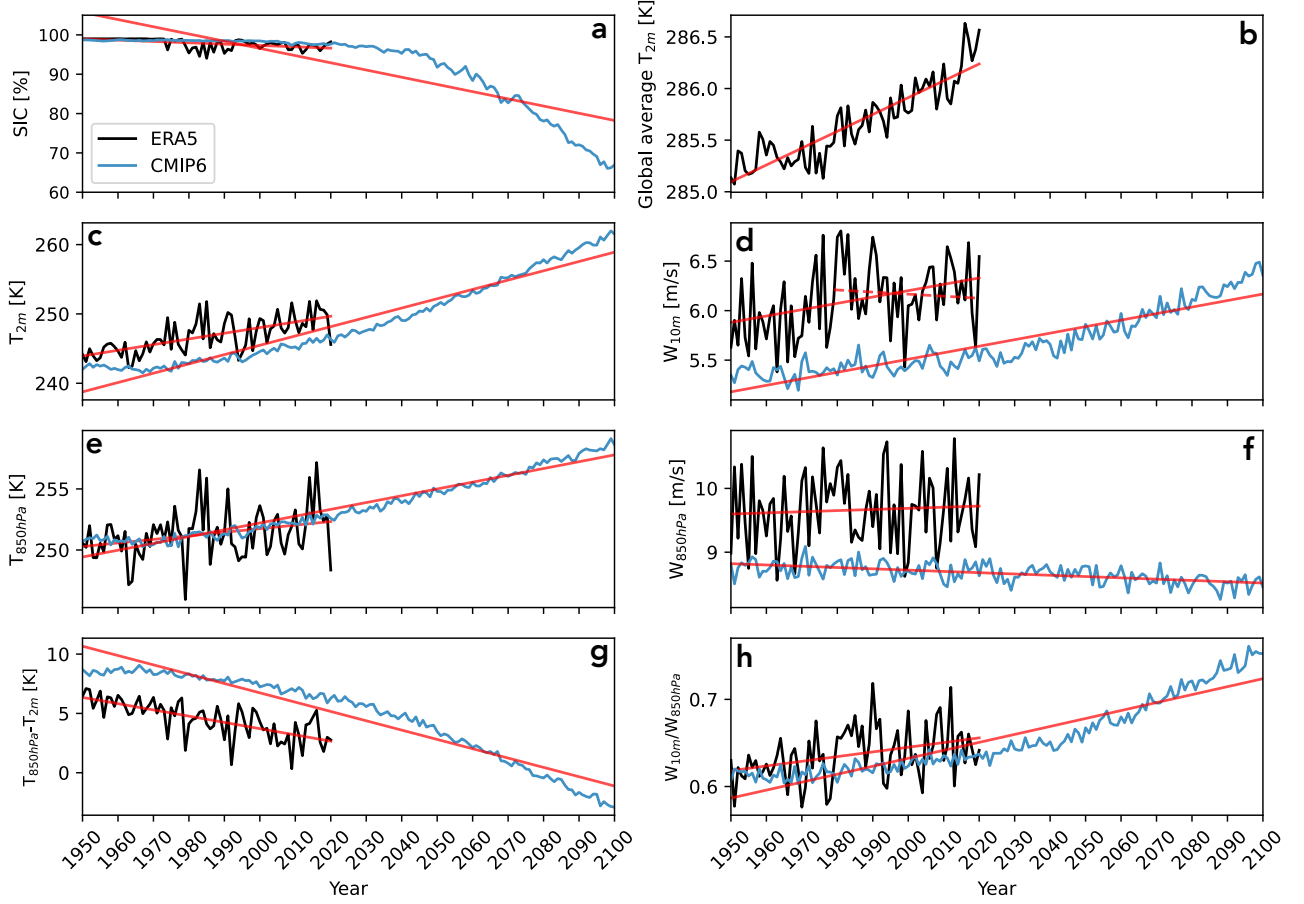


Figure 7: Arctic winter (JFM) mean sea ice concentration (a), 2-meters (c) and 850 hPa (e) temperature, 10-meters (d) and 850 hPa (f) wind speed, temperature gradient (g) and wind speed ratio (h) time evolution based on ERA5 and CMIP6 multi-model mean. Red lines show the trends, red dashed line in panel c is 10-meters wind speed trend for the reduced period 1979-2020. Panel b shows ERA5 winter (JFM) mean global average 2-meter temperature.