Global Energy Policy Research | GEPR

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IPCC????????????????????????

?? ?? · Thursday, February 17th, 2022



Francesco Scatena/iStock

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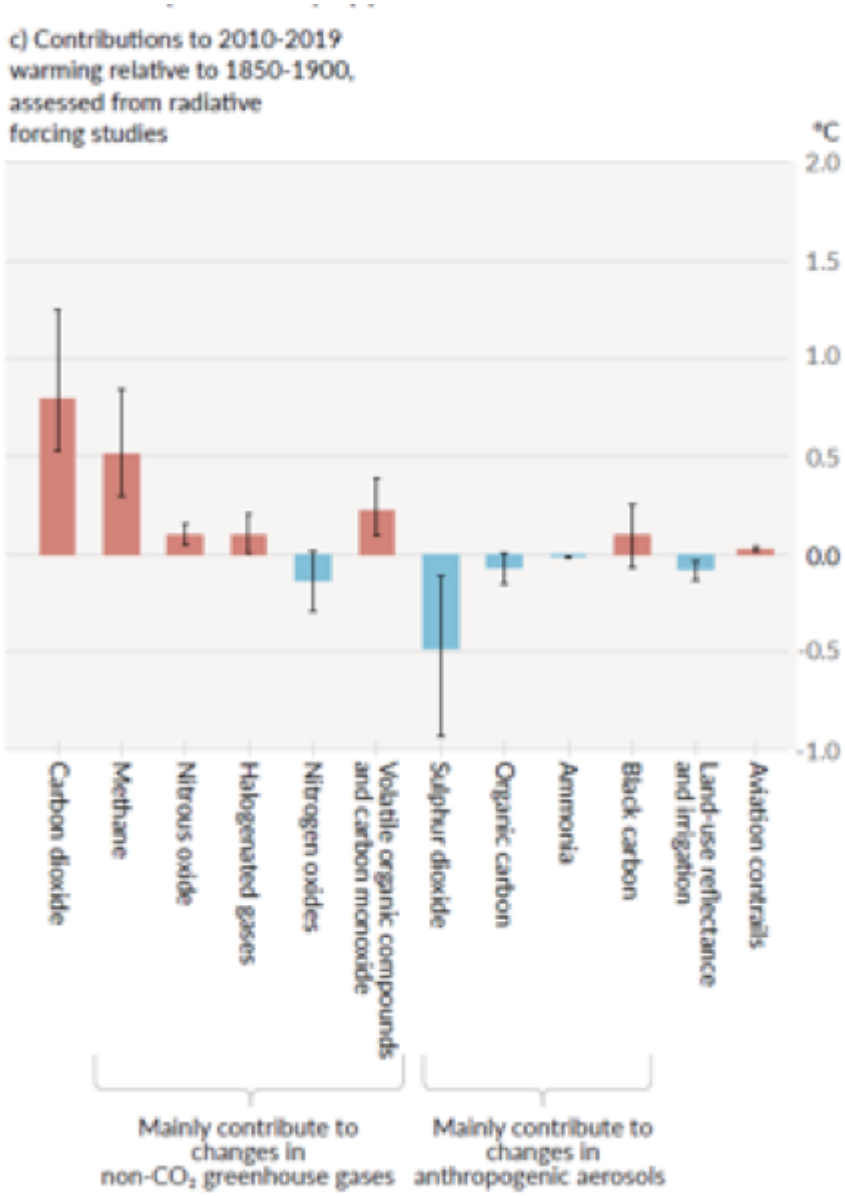


Figure SPM.2

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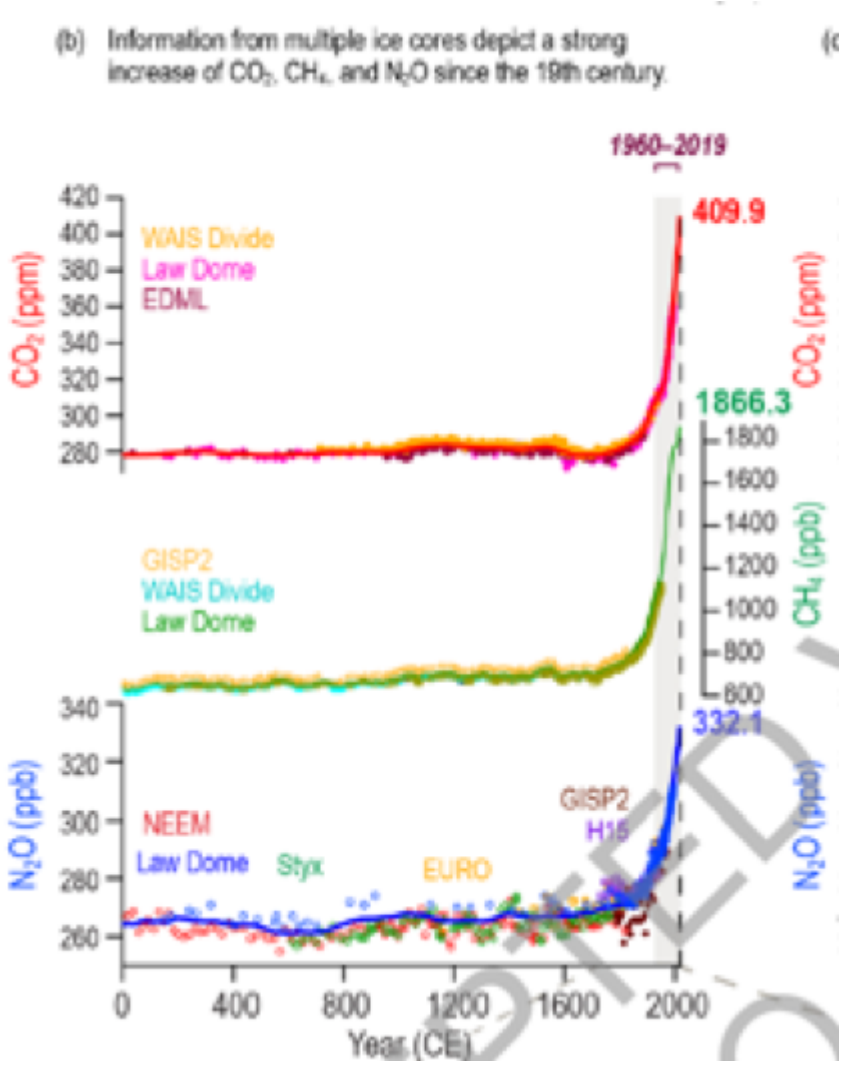


Figure TS.9

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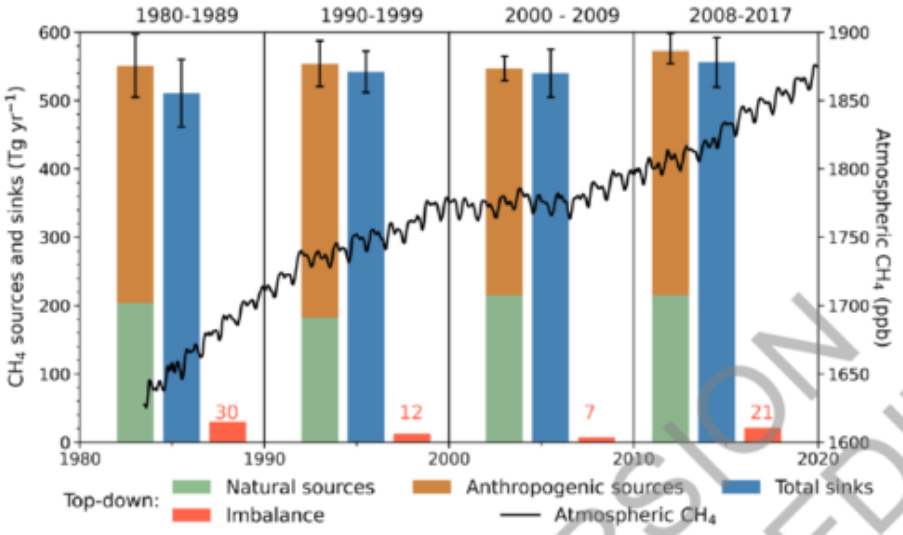
- ???????Anthoropogenic????????????????????????????????
- ???????????Natural sources??????

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- ?????OH?????????9??????????????????Total Sinks?

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Cross-Chapter Box 5.2, Figure 1: **Methane sources and sinks for four decades from atmospheric inversions with the budget imbalance** (source-sink; red bars) (plotted on the left y-axis). Top-down analysis from (Kirschke et al., 2013; Saunois et al., 2020). The global CH_4 concentration seen in the black line (plotted on the right y-axis), representing NOAA observed global monthly mean atmospheric CH_4 in dry-air mole fractions for 1983–2019 (Chapter 2, Annex V). Natural sources include emissions from natural wetlands, lakes and rivers, geological sources, wild animals, termites, wildfires, permafrost soils, and oceans. Anthropogenic sources include emissions from enteric fermentation and manure, landfills, waste and wastewater, rice cultivation, coal mining, oil and gas industry, biomass and biofuel burning. The top-down total sink is determined from global mass balance includes chemical losses due to reactions with hydroxyl (OH), atomic chlorine (Cl), and excited atomic oxygen (O^1D), and oxidation by bacteria in aerobic soils (Table 5.2). Further details on data sources and processing are available in the chapter data table (Table 5.SM.6).

ACCEPTED VERSION
FINAL EDITS

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Connolly(2020)??????????????

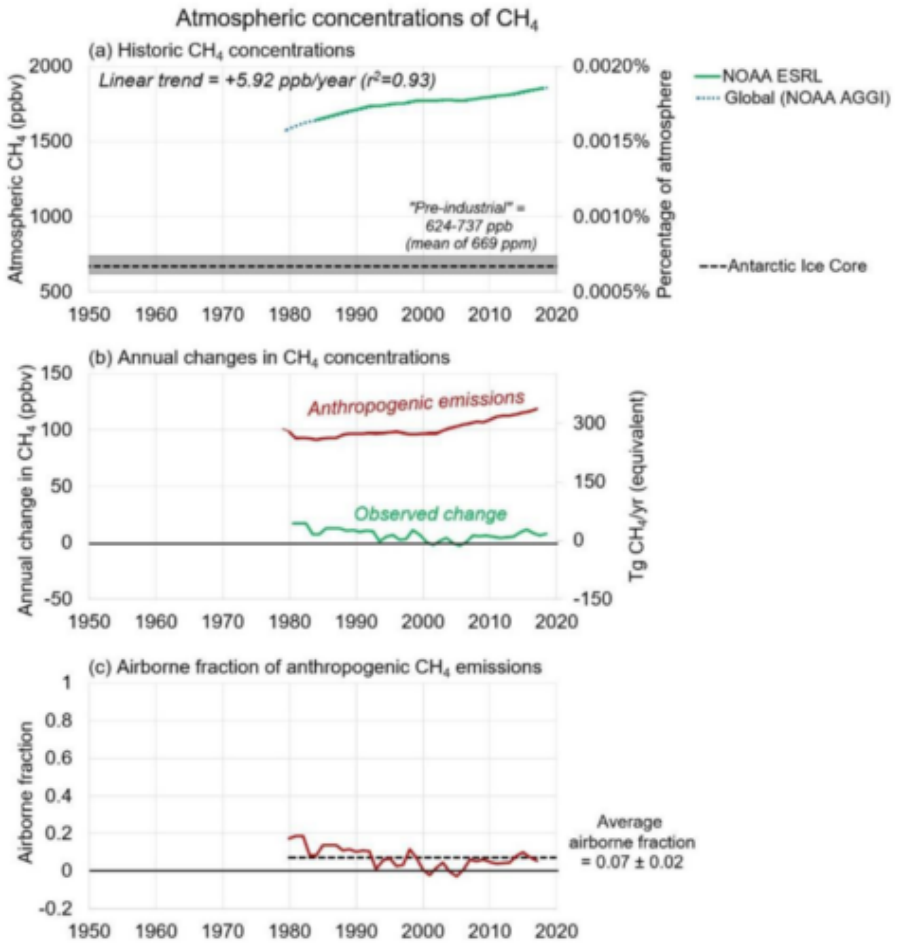
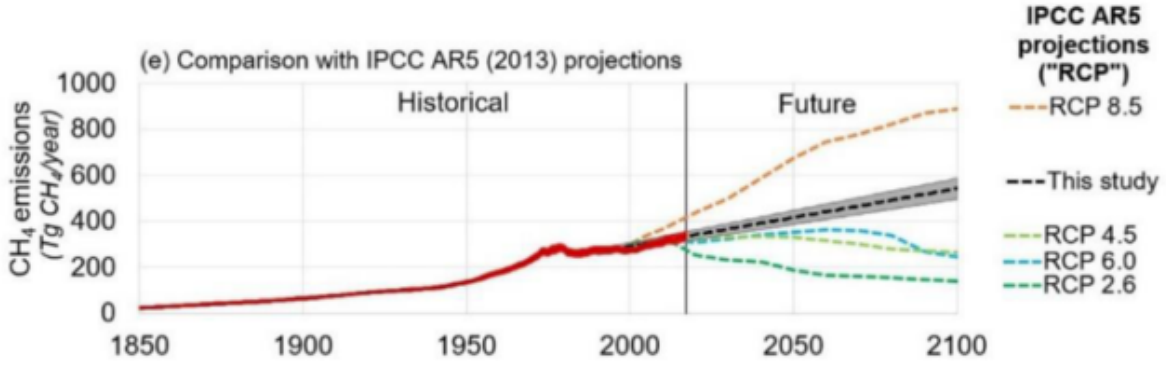
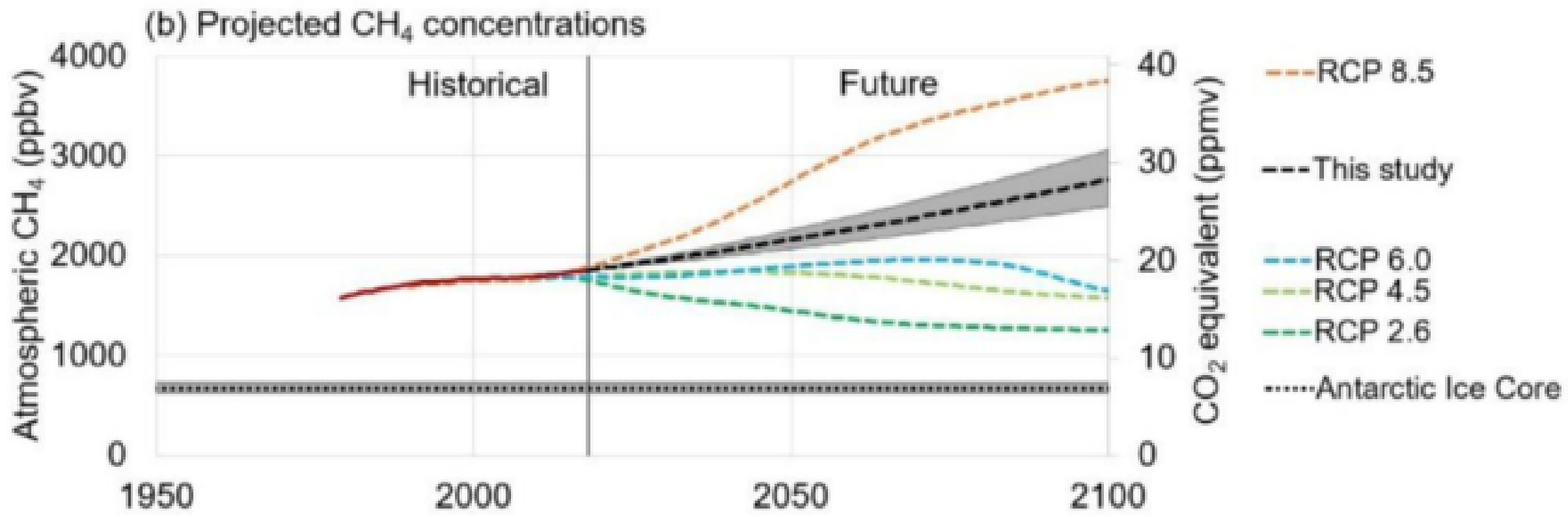


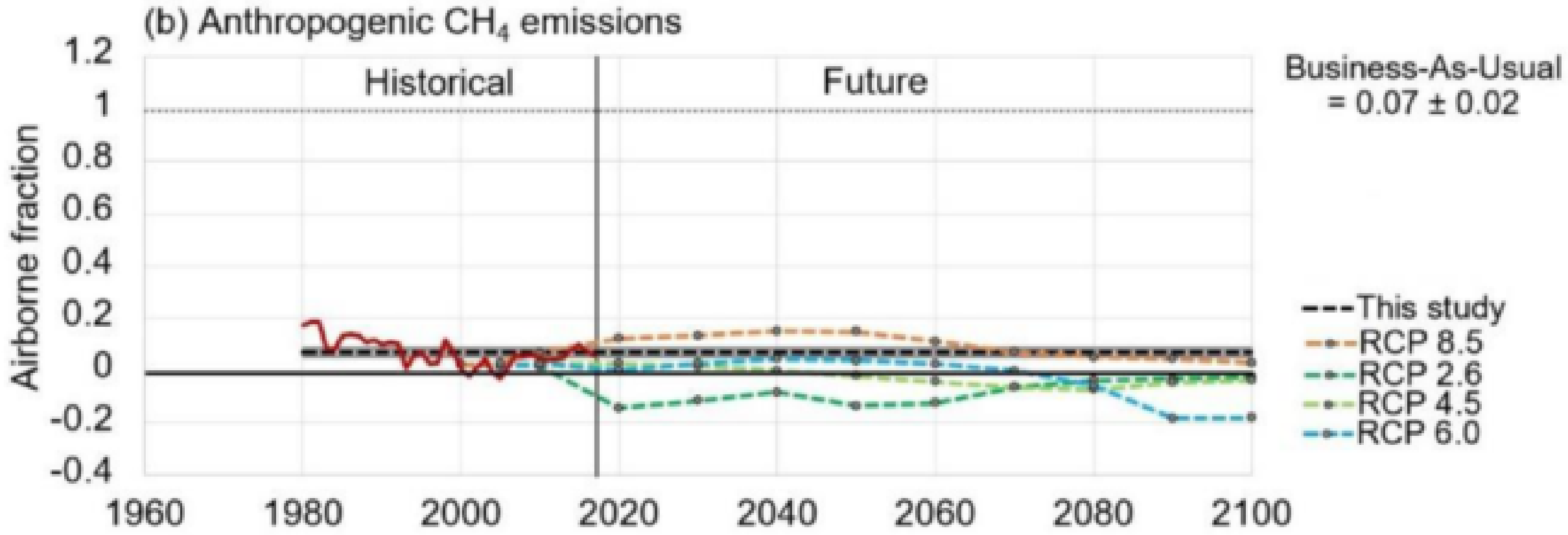
Figure 7. (**a**) Changes in annually averaged atmospheric CH_4 concentrations since direct and (almost) continuous measurements began in 1979. The estimates of pre-industrial concentrations derived from the Antarctic Law Dome ice core are shown with a grey band for comparison. (**b**) A comparison of the annual anthropogenic CH_4 emissions (red line) with the observed annual changes in atmospheric CH_4 (green line). (**c**) The "airborne fraction" for CH_4, i.e., the fraction of anthropogenic CH_4 emissions that remained in the atmosphere for each year since 1980. Note that the airborne fraction was below 0 on three years (2001, 2004 and 2005). The horizontal axes correspond to years.

?????(a)??????????????????(b)????????????????????????????????(c)?airborne fraction???

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