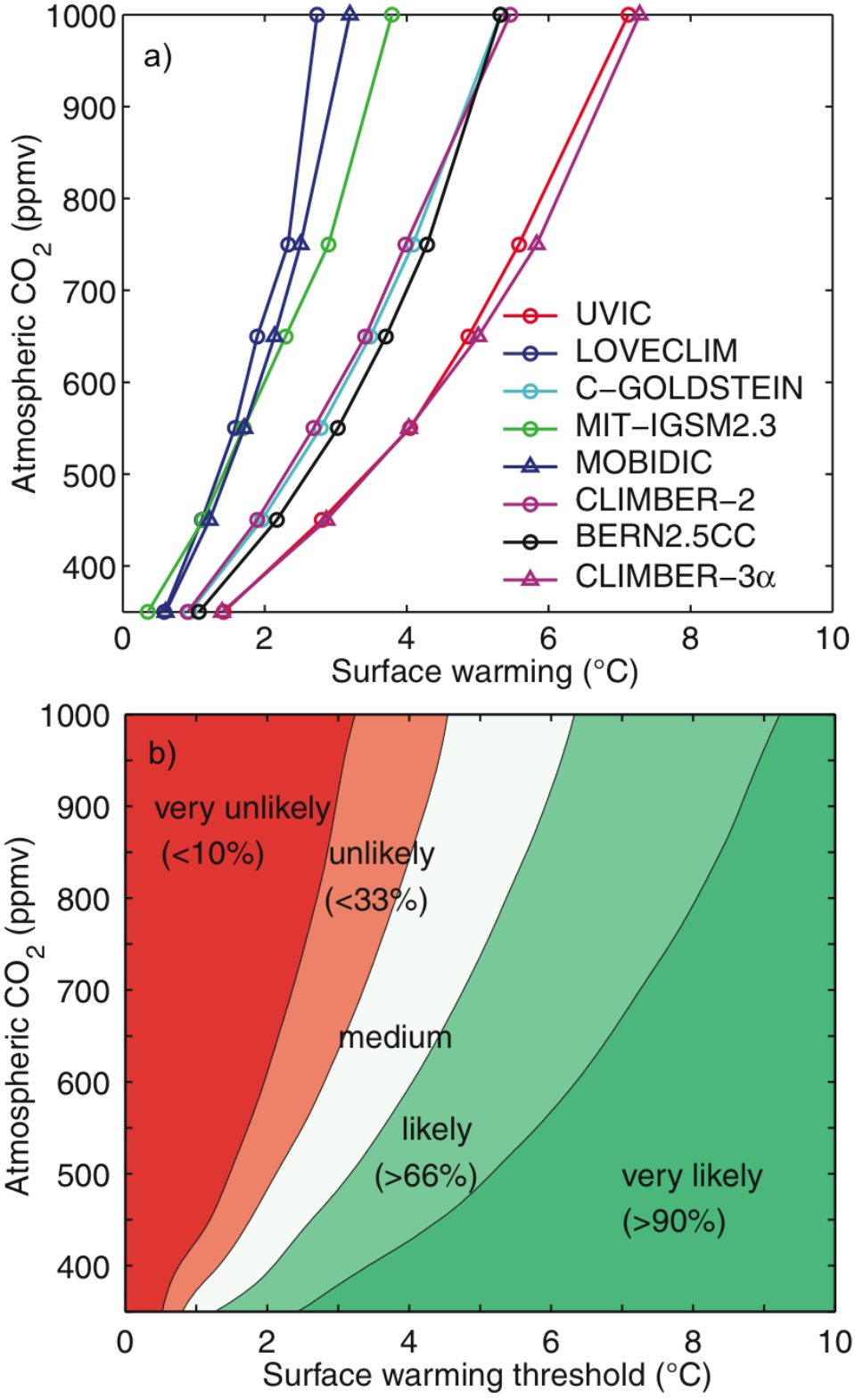


Figure 10.7.5. a) Equilibrium surface warming for seven different EMICs and different stabilization levels of atmospheric CO_2 or the equivalent radiative forcing, b) a probabilistic picture based on the same scenarios, showing probability of remaining below a certain warming threshold for a given CO_2 equivalent stabilization concentration, derived from Bern2.5D EMIC with variable ocean heat uptake and using several PDFs of climate sensitivity (modified from Knutti et al. (2005)).

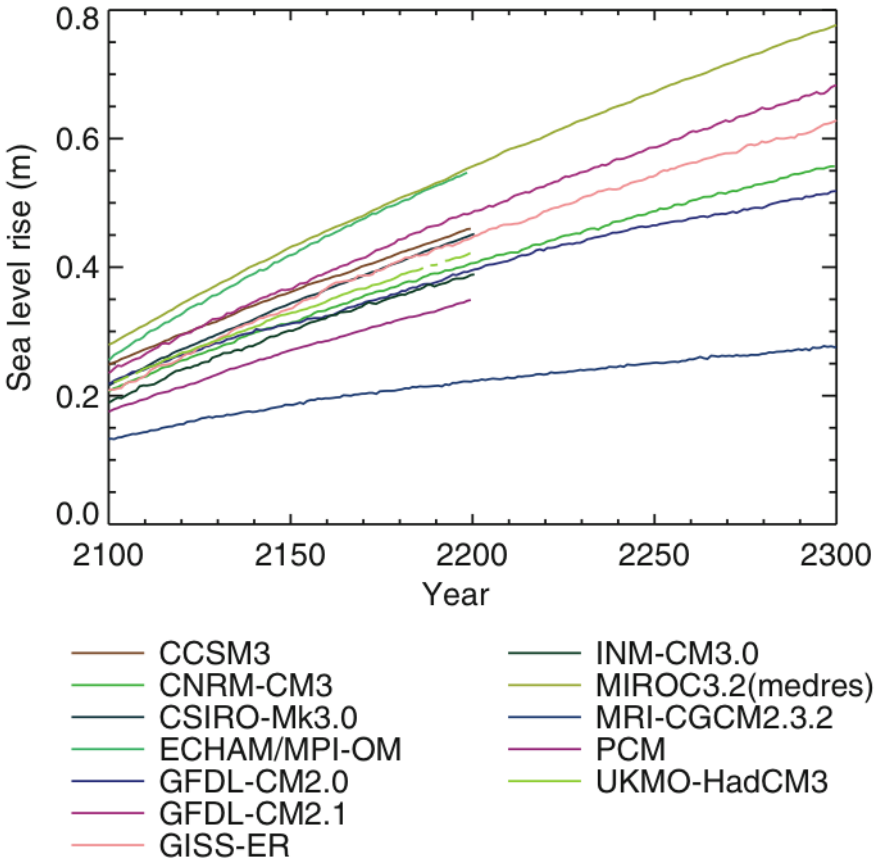


Figure 10.7.6. Globally averaged sea level rise from thermal expansion relative to year 2000 for the A1B commitment experiment calculated from AOGCMs.

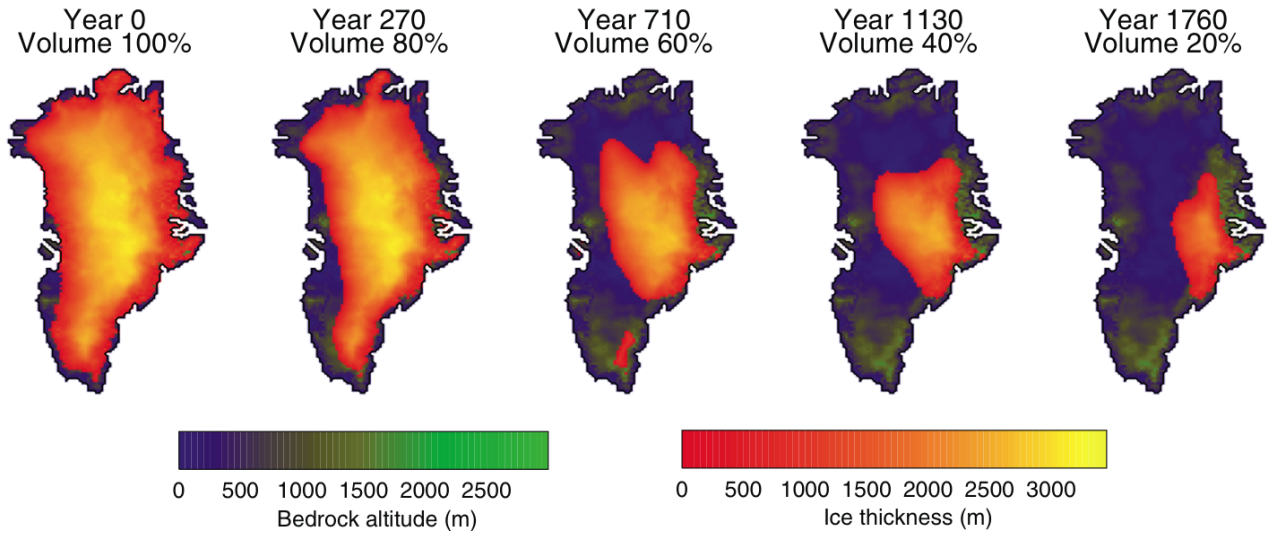
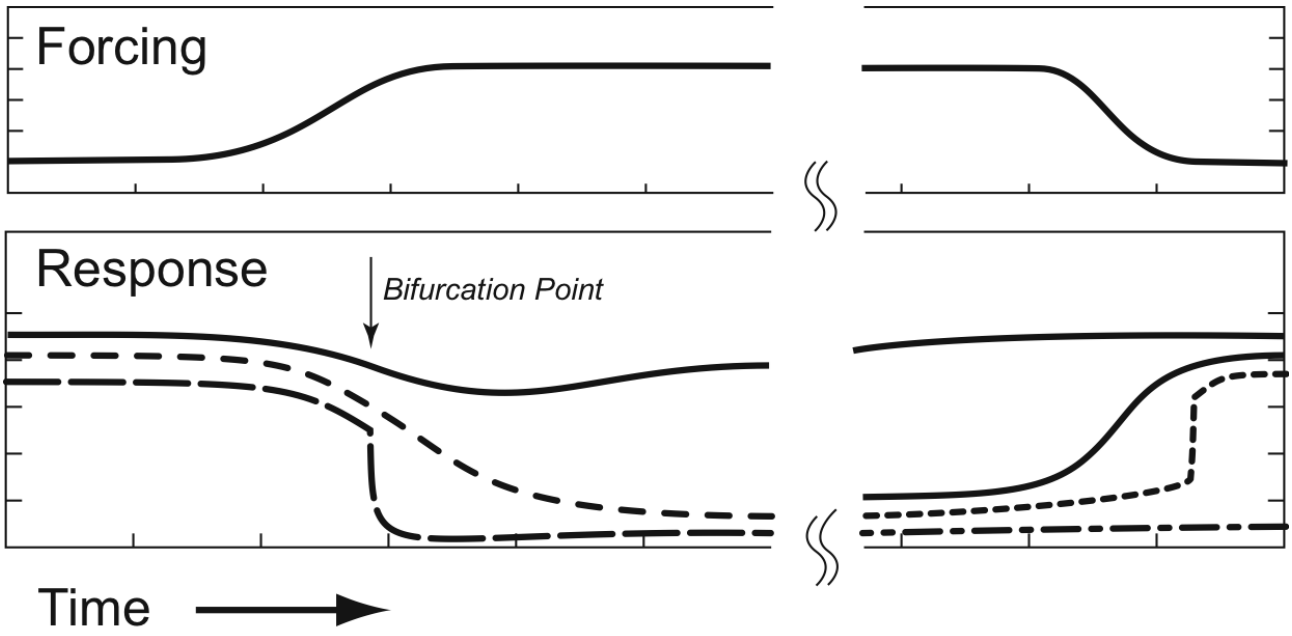
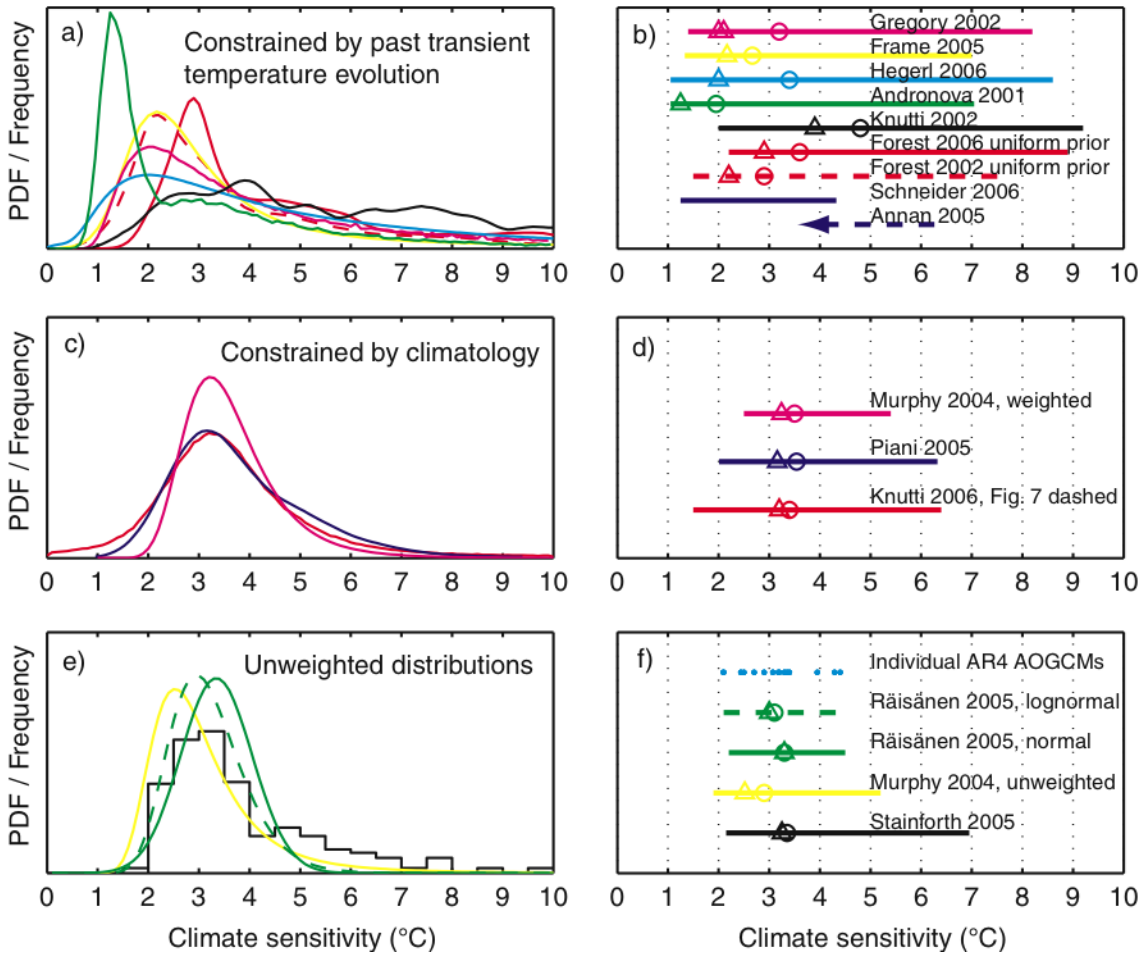


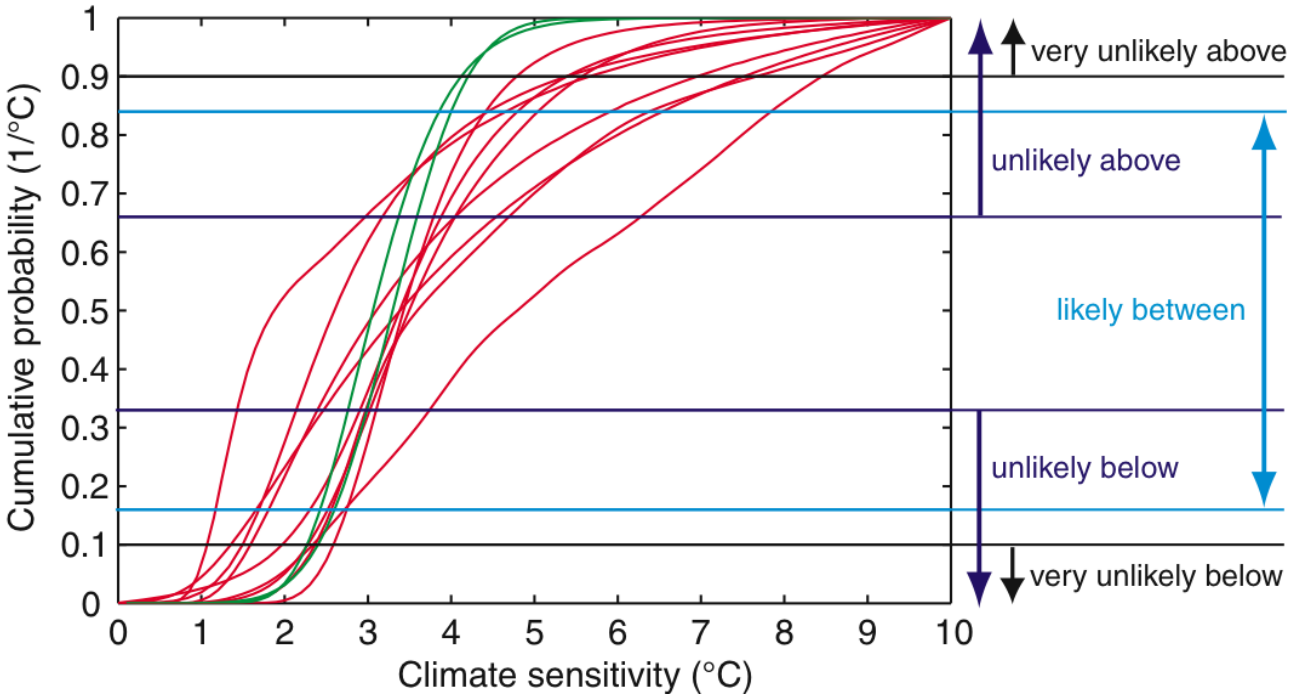
Figure 10.7.7. Evolution of Greenland surface elevation and ice sheet volume versus time in the experiment of Ridley et al. (2005) with the HadCM3 AOGCM coupled to the Greenland ice sheet model of Huybrechts and De Wolde (1999) under a climate of constant 4 × preindustrial CO_2.



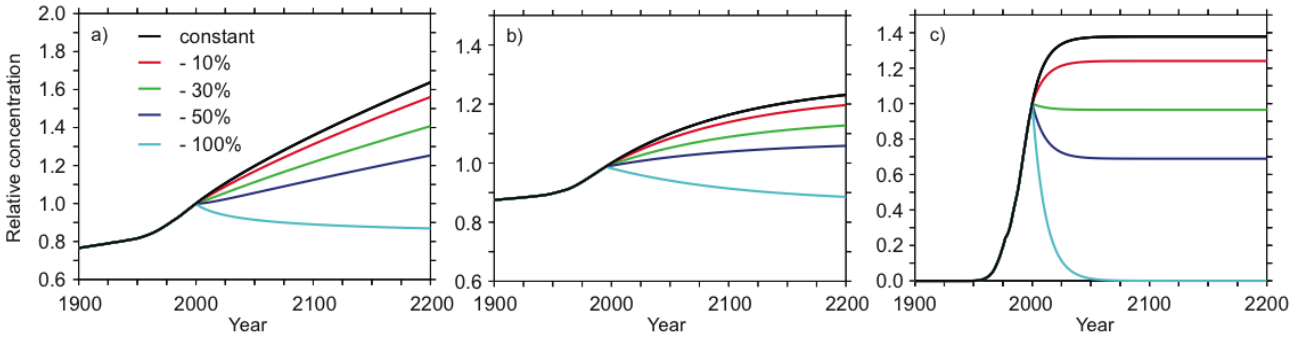
Box 10.1, Figure 1. Schematic illustration of various responses of a climate variable to forcing. The forcing (top panels) reaches a new stable level (left part of figure), and later approaches the original level on very long time scales (right part of the figure). The response of the climate variable (bottom panels) can be smooth (solid line) or cross a bifurcation point inducing a transition to a structurally different state (dashed lines). That transition can be rapid (abrupt change, long-dashed), or gradual (short-dashed), but is usually dictated by the internal dynamics of the climate system rather than the forcing. The long-term behaviour (right panel) also exhibits different possibilities. Changes can be irreversible (dash-dotted) with the system settling at a different, stable state, or reversible (solid, dotted) when the forcing is set back to its original value. In the latter case, the transition can, again, be gradual or abrupt. One example for the illustration, but not limited to, is the response of the Atlantic meridional overturning circulation to a gradual change in radiative forcing.



Box 10.2, Figure 1. a) PDF or frequency distributions constrained by the transient evolution of the atmospheric temperature, radiative forcing and ocean heat uptake, b) as in panel a) but 5–95% ranges, medians (circles) and maximum probabilities (triangles), c/d) same but using constraints from present-day climatology, e/f) unweighted or fitted distributions from different models or from perturbing parameters in a single model. See text for details. Note that Annan et al. (2005b) only provide an upper but no lower bound. All PDFs are truncated at 10°C for consistency, ranges may differ from numbers reported in individual studies.



Box 10.2, Figure 2. Individual cumulative distributions of climate sensitivity (red) and their average (blue) from Box 10.2, Figure 1a/c (except LGM studies and Forest et al. (2002) which is superseded by Forest et al. (2006)) and cumulative distributions fitted to the AOGCMs climate sensitivities (green) from Box 10.2, Figure 1e. Horizontal lines and arrows mark the edges of the likelihood estimates according to IPCC guidelines.



Question 10.3, Figure 1. a) Simulated changes in atmospheric CO_2 concentration relative to present-day for emissions stabilized at current level (black) or at 10% (red), 30% (green), 50% (dark blue), and 100% (light blue) lower than current level; b) same for a trace gas with a life time of 120 years; c) same for a trace gas with a life time of 12 years.