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Neogene Environments – Key to the Future?

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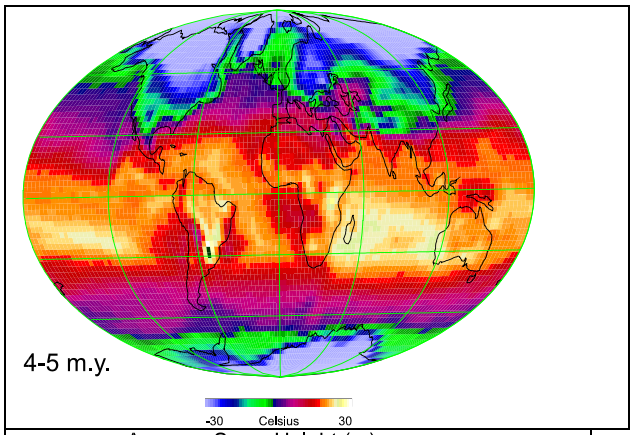
For quite a long time the Neogene appeared to be suitable to study the upper limit of climate change: A large pliocene-type El Nino is one of the end-points ongoing climate change might lead to.
Ice rafted detritus (IRD) from ca. 5 m.y. on at ODP Site 642B, off central Norway, shows, that about in the whole Pliocene at least ice-floes occurred. They coexisted with large El-Ninos (reconstructed sea surface temperatures, SSTs). The same (IRD) applies to ODP sites off the SW Aleutians. Today at site 642B no ice-floes exist, not even in winter. In addition, the carbon of pliocene coals was, at that time (especially in the Miocene), in the atmosphere. It means: Higher CO_2-levels compared to the pre-industrial levels. This implies: Pliocene greenhouse climates had very steep latitudinal temperature-gradients – including an arctic ice-cover (above IRD as data!) that was at least comparable to today.
Climate model ccm3.6 (CESM today), driven with such reconstructions, produced for northern hemisphere (NH) summer results that are overall comparable to today (more moisture).
In NH winter extremely cold conditions resulted (Fig. 1) with large amount of snow-fall (moisture-advection into Eurasia) over the NH continents (Fig. 2). Thus, in principle, a "natural backstop" for climate change might exist.



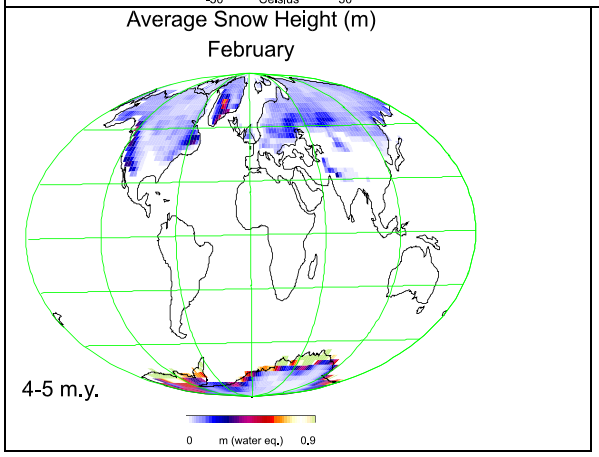


Figure 1: Reconstructed SSTs as data, ice cover as in the text. Modelled result (avg. February temp., bottom layer): Extremely cold NH continents ("white"=-30° C). Implies: Twice a year the front between cold dry and moist warm air moves over the continents (precipitation as snow-fall).

Figure 2: Moisture-advection via Parathethys into Eurasia with massive snow-fall.
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1) Through this: preparation of pleistocene glaciations? (= consistent with above IRD).
2) A backstop for climate change – if such conditions occur again?

But: Can the Holocene produce such El-Ninos? – as the Isthmus of Panama is closed. Can the deep-ocean circulation change again to conditions before 2.6 and before 4 m.y.? The basalts of the Faeroe-Block (Greenland-Scotland Ridge, GSR) are underlain by eocene and paleocene silts and clays ("dry" oil wells). The Jan Mayen Microcontinent appears to extend to S-Iceland. The crust of Iceland is much thicker than oceanic crust. This implies: The subsidence of the GSR followed a "non-Sclater path", e.g. "comparable to continental crust with massive basaltic load". The change to the Gelasian/Pleistocene "ice-house" might well be supported through passing a threshold value for water-exchange into the Norwegian Sea at 2.6 m.y. (before was a short time of water-exchange in the Paleogene).
To solve these questions (2.6 m.y. change, upper limit for ongoing climate change) finally(!), redrills of DSDP-Sites 336, 337 and 352 with today's technology (all safety-assessments done) plus three new IODP-Sites in the Denmark-Straits between Iceland and Greenland are needed.