Some aspects of Carbon Cycle Modelling for IntCal24

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HELMHOLTZ-ZENTRUM FÜR POLAR- UND MEERESFORSCHUNG

HELMHOLTZ RESEARCH FOR GRAND CHALLENGES

AMOC changes (D/O events) not yet considered

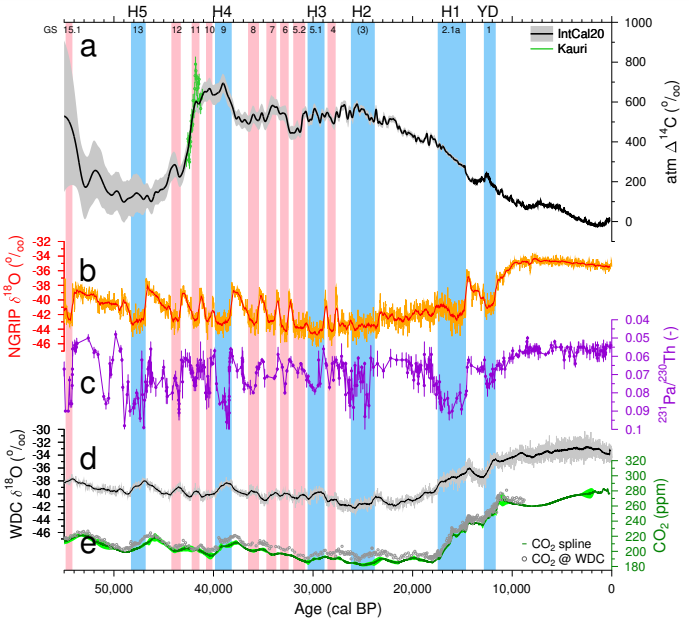
a: atmospheric $\Delta^{14}C$

b: Greenland (NGRIP) $\delta^{18}O$

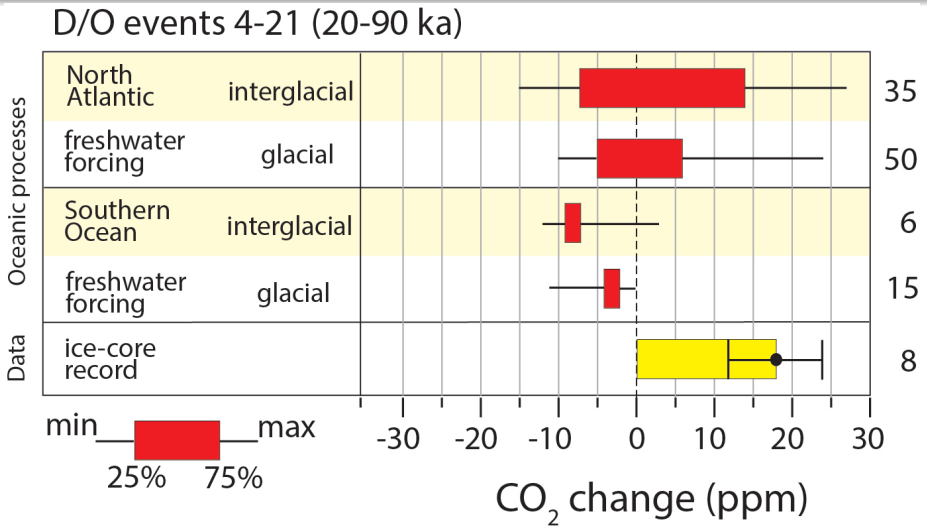
c: $^{231}Pa/^{230}Th$ @ Bermuda Rise
AMOC is reduced
during each Greenland stadial
with H event and without H event

d: Antarctic (WDC) $\delta^{18}O$

e: atmospheric CO_2



Multimodel Results: $\Delta(CO_2)$ for AMOC strenghtening



(Gottschalk et al 2019, doi: 10.1016/j.quascirev.2019.05.013)

At best: similar multimodel results needed for Δ(atm $\Delta^{14}C$).

Carbon cycle model improvements

Most recent model version:
Köhler and Munhoven, 2020
doi: 10.1029/2020PA004020

Analysis for ^{14}C submitted

in Marine20 an
older model version was used
(AOB only, bottom left)