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Thresholds on atmospheric carbon dioxide for Antarctica and Greenland inceptions derived from Climate/cryosphere models

Christophe Dumas (1), Gilles Ramstein (1), Yannick Donnadieu (1), Catherine Ritz (2), Stefano Bonelli (1), and Robin Waldman (1)

(1) Laboratoire des Sciences du Climat et de l'Environnement, Gif sur Yvette, France (gilles.ramstein@lsce.ipsl.fr), (2) Laboratoire de Glaciologie et Géophysique de l'Environnement, Saint Martin d'Hères, France

Boundary conditions in the context of glacial inception of Antarctica and Greenland glaciations allow to perform "realistic" Climate/crosphere simulations as well as sensitivity experiments to infer the level of atmospheric carbon dioxide necessary to make these inceptions possible.
We use an EMIC (CLIMBER3) coupled with an Ice Sheet Model (GREMLINS for northern hemisphere and GRISLI for Southern hemisphere) to perform transient experiments for Greenland inception with different values of atmospheric carbon dioxide.
Using the insolation variations derived from Laskar (2004), we show that for pCO2 higher than 1PAL (280ppmv) inception may occur when 65°N summer insolation is minimum but the glaciation abort and fail to cover for long time a large area of Greenland. Conversely, in our model, perenial glaciation is indeed triggered by insolation but only occurs when pCO2 reaches values close to preindustrial level (280ppm).
We also performed simulation of Antarctica accounting for both pCO2 decrease and Drake Passage opening. Our main conclusion is that the two major forcings are the pCO2 decrease and the opening of the Drake Passage leading to a glaciation for a slightly weaker pCO2 corresponding to 3 PAL.