



Simulating middle Miocene ocean circulation changes and the potential effect on climate

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The middle Miocene climate transition (about 14 Ma BP) was a major step from greenhouse into "icehouse" climate conditions. One hypothesis relates the mid-Miocene cooling to the closure of the eastern Tethys, interrupting the formation of warm Tethyan Indian Saline Water which is thought to have been a major agent in the meridional heat transport that helped to maintain Antarctica relatively warm during the early Miocene. Here, we will report first results of a global ocean circulation carbon cycle model with variable resolution focusing on the Mediterranean region, which allows to investigate the role of the Tethys on oceanic heat transport and hence climate during the middle Miocene.