

LOOP Current variability - its relation to meridional overturning circulation and the impact of Mississippi discharge

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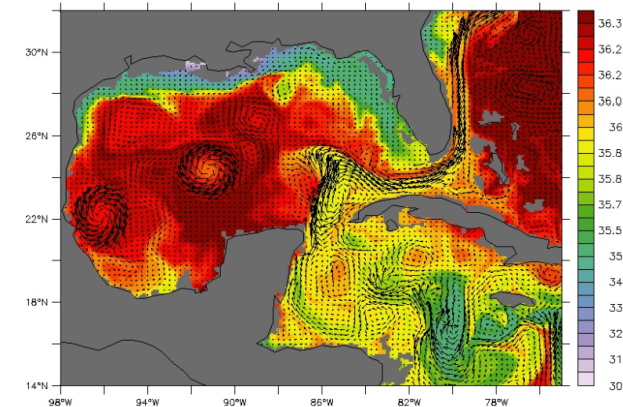
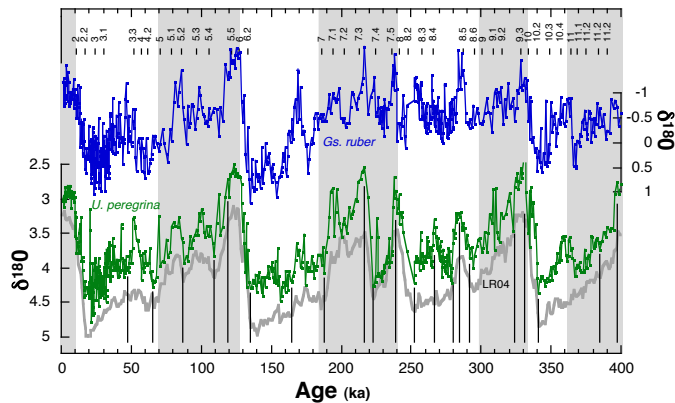
Ongoing funding:
Research Unit Paleoceanography

Previous funding:
Deutsche Forschungsgemeinschaft (DFG)
SPP 1266 „INTERDYNAMIC“ (2008-2009)

The **Loop Current** mediating the oceanic heat and salt flux from the Caribbean Sea into the Atlantic and its interference with the **Mississippi** discharge are critical for Gulf of Mexico sea surface temperature variability not only affecting regional climate but also driving water vapor transport towards high northern latitudes.

Topic I: Impact of LOOP Current extent and variability on the Gulf of Mexico surface hydrography and its change at the beginning and ending of interglacial stages 1 and 5

- regional extent of LOOP Current and hydrographic changes in the Gulf
- hydrographic gradients between the Gulf and central Caribbean
- correlation of local events with continental climate and thermohaline circulation



Geochemical proxy data generation
combined with high-resolution
numerical ocean circulation modeling

Topic II: Relation between Mississippi discharge and LOOP extent

- temporal and spatial patterns of freshwater input
- effect of freshwater pulse on surface hydrography
- tracing freshwater pulses within the Gulf and into the N-Atlantic
- effect of freshwater injection on large-scale circulation

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