Plaeoceanography and carbon cycle during the glacial period

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Carbon cycle within the Earth's surface plays an important role for the climate change through the Earth's history. Recent investigation on the ice core abd the seefloor sediment core provide the temporal variations of the atmospheric CO2 and the carbon isotope in the sea water during the glacial-interglacial cycle. However, the numerical model on the carbon cycle in this time scale has not been established. We construct a carbon cycle model of vertical one-dimensional ocean in which diffusive and advective transport, biological and chemical processes, and geological processes such as weathering and degassing are considered, and try to reconstruct the carbon cycle during this period using the geological data described above as boundary conditions.