

The Role of Seafloor Weathering in Global Biogeochemical Cycles

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Abstract

Continental chemical weathering is generally thought to play a critical role in the long-term carbon cycle and in setting the composition of multiple aspects of ocean chemistry. Seafloor weathering, the low-temperature reaction of seafloor basalts and seawater, is generally considered much less. This is despite the vast area of seafloor that undergoes seafloor weathering, the greater reactivity of basalt than average continental crust, and the similar magnitude of the fluid fluxes involved in seafloor weathering and continental weathering. This seminar will explore the observations that suggest that seafloor weathering plays an important role in the long-term C-cycle and influences many aspects of ocean chemistry. Looking forward, the lava section of the oceanic crust may provide an idea location for sequestering anthropogenic carbon safely and permanently if technical challenges can be overcome.