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# Rock weathering and Carbon cycle

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In the history of the Earth system, we can find indicators of hot or glacial periods, as well as brutal climatic change...
How can we explain those climate variations on a geological timescale ?
One of the causative agents is probably the fluctuation of atmospheric CO2 amounts, (gas responsible for the greenhouse effect).
A concrete study of some CO2 fluxes between Earth system reservoirs (atmo, hydro and lithosphere) is proposed in this poster.
Hydrogencarbonate is the major ion in river surface waters and its amount is so high that it can not be explained by a simple atmospheric Carbon diffusion.
From a simple measurement of river HCO3- concentration, we can estimate the consumption of atmospheric CO2 that arises from carbonate and silicate weathering processes.
Practical experiments are proposed.
These are carried out in the local environment, and are conform to the curriculums of Chemistry and Earth sciences. These tests enable us to outline long-term Carbon cycles and global climatic changes.

Key words : Erosion, rock weathering, CO2 cycle, Hydrogencarbonate in waters, climatic changes