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Carbonate weathering does matter!

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Despite the textbook statement that carbonate weathering has no role on the global carbon cycle, a growing number of studies have revisited the rates and controls of Ca and Mg carbonate weathering over the last decade. All conclude that carbonate weathering, at least transiently, is of crucial importance for the regulation of the Earth's system.

Here, we will give arguments, at the regional and global scales, showing that the production of CO₂ by ecosystems is the main driver of carbonate weathering. If this is true, then carbonate weathering is 1) the perfect example of a geological mechanism triggered by ecological processes and life and therefore the way of investigating the coupling between “long” and “short”-term cycles and 2) a planetary process whose rates will change in response to global warming, atmospheric composition changes and land use, creating a possible negative feedback on ocean acidification and possibly mitigating greenhouse effect.

We will conclude on the fact that research on carbonate weathering processes and rates is more than ever needed.