

Abstract: Chemical weathering is a fundamental process linking the Earth's surface environment with the long-term evolution of climate. Through the breakdown and alteration of rocks and minerals, chemical weathering regulates the transfer of elements between the spheres of Earth. In particular, the Silicate weathering, in particular, consumes atmospheric CO<sub>2</sub> and delivers dissolved ions to oceans, influencing carbon cycling and global climate over geological timescales.

Weathering rates are strongly modulated by climate, tectonics, lithology, and biological activity, creating feedbacks between surface processes and climate change. Variations in chemical weathering intensity recorded in marine and floodplain sediments, therefore provide key insights into past environmental conditions. In this talk, Dr Gurumurthy will discuss the role of chemical weathering as an important process to drive Earth surface environment and global climate over the geological time scales.

# **Chemical weathering as an important driver of Earth Surface Environment and Climate**

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