

Geowissenschaftliches Kolloquium

Planetary habitability controlled by carbonate-silicate cycle feedbacks and biogeochemical processes

Thursday, July 01, 2021. Discussion from 17:00 h

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The habitability of rocky planets depends on atmospheric greenhouse gases, which are controlled by complex interactions between the mantle, crust, and atmosphere. On Earth, the long-term carbon cycle regulates the climate over millions of years. Applying carbon cycle models to other planets requires a consideration of their tectonic and geological state. In this talk, I will present coupled interior-atmosphere models for different planets with and without plate tectonics. Finally, I will discuss how biogeochemical processes can enhance planetary habitability.



Dennis Höning studied Geophysics at the University of Münster and completed his PhD 2016 at the German Aerospace Center in Berlin. As an Origins Center Research Fellow, he is currently working at the VU Amsterdam, where he focusses on the prospect for life beyond Earth. To this end, he develops Earth System models for different planetary bodies and studies factors that determine their habitability.

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