Planetary simulations at DLR Berlin and in space – results and future work

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Abstract

The aim of the Astrobiological laboratories group at DLR Berlin is to combine field studies, laboratory simulation experiments and space experiments to support the search for habitable planets and life on Mars, the Icy Moons, and beyond. Different extremophiles collected from environments with terrestrial analogy of Mars or other planetary bodies (Atacama, Antarctica, permafrost...) were tested to simulated Mars analog conditions in the DLR Mars Simulation Facility (MSF) and are planned to be tested also to laboratory simulation experiments at the new DLR-Berlin's Planetary Analog Simulation Facility (PASLAB). These new experiments are designed to explore the limits of life and the boarders of habitability by studying further the organism's survivability and endurance to conditions expected on planets around other solar type or red dwarf stars. Also new environmental sensor systems and instruments are being developed and tested at the DLR Berlin PASLAB. The application of all these facilities and instruments might deliver in coordination with future exposure experiments new results which will support future space missions, the search for habitable worlds, and the search for life in the outer Solar System and on exoplanets.

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