
[JJ] Evening Poster | P (Space and Planetary Sciences) | P-PS Planetary Sciences

[P-PS08]Planetary Sciences

convener: Takaya Okamoto (Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency), Kenji Kurosaki (Department of Physics, Nagoya University)

Sun. May 20, 2018 5:15 PM - 6:30 PM Poster Hall (International Exhibition Hall7, Makuhari Messe)

We call for general interest papers for Planetary Sciences. Planetary Sciences consist of a variety of studies on the past, present, and future of our solar system and exoplanetary systems. Discussions based on various backgrounds are encouraged.

[PPS08-P15]What happens if you run out of ocean?

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Keywords: habitability, exoplanet, earth, outreach, climate

The discovery of Earth-sized worlds has led to extensive speculation about whether any could be habitable. However, not only is very little known about these planets, but small deviations away from Earth-like conditions can potentially lead to major differences in surface environment.

Here we explore how changes to the fraction of the planet surface covered by water can affect the atmospheric carbon dioxide levels (a greenhouse gas) due to changes in a simple carbon cycle. We show that even altering this one property of an otherwise Earth-like planet can make major changes to the heat retention capabilities of the atmosphere.

We present our results as an interactive webpage where users can try different fractions of land and sea and see how the levels of carbon dioxide change. Our main goal is for users to explore for themselves how even small changes can greatly influence planetary environment and therefore, care must be taken in claiming a new world is truly “like Earth”.