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The limiting factors on volcanism on massive stagnant lid planets

D. Höning (1,2) and T. Spohn (1,2)

(1) University of Münster, Institute for Planetology, Münster, Germany (Dennis.Hoening@dlr.de), (2) DLR, Institute of Planetary Research, Berlin, Germany

As the number of discovered exoplanets is increasing, the question whether these planets could harbor life becomes more relevant. Chemoautotrophs, which live from thermal disequilibrium due to volcanic activity, are believed to have been the first organisms on Earth and maybe on planets in general. Furthermore, volcanism influences the atmosphere, and therefore the habitability of the planet. Therefore, we investigate weather volcanism could occur on massive stagnant lid planets in dependence of their mass, age, surface temperature or their relative mantle thickness.