Is there an Unhabitable Zone?

Leconte Jérémy*[1,2,3]

[1]Laboratoire de Météorologie Dynamique (LMD) – École normale supérieure [ENS] - Paris, Polytechnique - X, Université Pierre et Marie Curie (UPMC) - Paris VI, INSU, CNRS : UMR8539 – LMD, UPMC - Campus de Jussieu, 4 place Jussieu, 75252 PARIS, France

[2]Canadian Institute for Theoretical Astrophysics (CITA) – University of Toronto 60 St. George Street Toronto, Ontario, M5S 3H8, Canada

[3]Center for Planetary Science – Canada

Abstract

The universe is a vast place, and a blind search for life out there is short of impossible. Therefore, it is only natural to try and reduce the area to explore by putting in some additional assumptions based on a few educated guesses and a lot of "a priori" experience from what is life here on Earth. On our way along this appealing path, we have come up with a working definition of where life should be looked for: the so-called Traditional Habitable Zone (THZ). But as this concept has taken what seems to be an ever increasing significance in mission design and selection, it is important to understand the limitations to its definition and usefulness. To do so, I will thus try to address the following questions: Is a planet inside the THZ habitable? Is a planet outside this zone necessarily unhabitable? In fact, is there anything like an Unhabitable Zone, and don't we risk to miss the unexpected if we try too hard to find another version of ourselves among the stars?

*Speaker