

The quest for habitable worlds and a look back at Earth

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EPFL – BC 420
Free admission

by Prof. Brice-Olivier Demory

The quest for life beyond Earth has a profound impact on all people and civilisations, irrespective of their cultures or beliefs. For millennia, human beings have wondered “are we alone?”. The onset of exoplanet discoveries, which started 20 years ago, inspires hope that this question may be eventually answered. In this talk I will describe some of the recent breakthroughs in exoplanet science including the TRAPPIST-1 system and detail the prospects of characterising life in our solar system and beyond within the next decade. I will also present a new experiment currently in design phase aiming at demonstrating the remote detectability of bio-signatures using spectro-polarimetry. Applications of this technique include novel research in Earth remote sensing and could improve screening capabilities for cervical, skin and gastric cancers.



Brice-Olivier Demory (born 1980) is SNSF Professor of Astrophysics at the University of Bern. He obtained his MSc in physics from EPFL and PhD from the University of Geneva. Brice-Olivier spent three years at MIT (USA) and three others at the University of Cambridge’s Cavendish Laboratory (UK). He leads in Bern a research group aiming at finding and characterising Earth-like exoplanets. Among the different projects he is involved in, Brice-Olivier is leading the development of a new space mission that will pave the way for the detection of life beyond the Earth within the next decade.

He is striving to develop societal applications through his research, from cancer screening and monitoring to education in developing countries. Brice-Olivier is recipient of the Royal Society and Rutherford Fellowships. He has received several awards from NASA for the discovery of the TRAPPIST-1 system and for his pioneering work in cubesat science in collaboration with the Jet Propulsion Lab.