



QUANTUM UNIVERSE LECTURES

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“Extrasolar Planets and
the Quest for Life in the Universe”

10, 24, and 31 January 2020 at 14.30h

Seminar Room 2, Building 2a, Campus Bahrenfeld

Abstract:

With the discovery of Extrasolar Planets, honored by this year's Nobel Prize, the Sun and its solar system have lost almost all of their previously held cosmic privileges, yet the Earth is still the only place in the cosmos with known life. As of today, several thousands of Extrasolar Planets have been discovered, some of them being located in the so-called "habitable zones" around their host stars, i.e., those regions, where liquid water, which forms the basis for all life on Earth, might exist on the planets' surfaces. Therefore discussions on the question "Are we alone in the Universe?", which had intrigued mankind for many centuries, have been rekindled, but answers have so far been quite speculative, to say the least.

In this lecture series I will introduce the topic "Extrasolar Planets" from an historical and astrophysical point of view and review the achievements hitherto made. I will present the various techniques to detect Extrasolar Planets and provide an overview of the so far derived demography of these objects and compare them to their solar system siblings. I will discuss the methods employed to obtain physical parameters of Extrasolar Planets and, finally, discuss a few possible future research areas including biosignatures.
