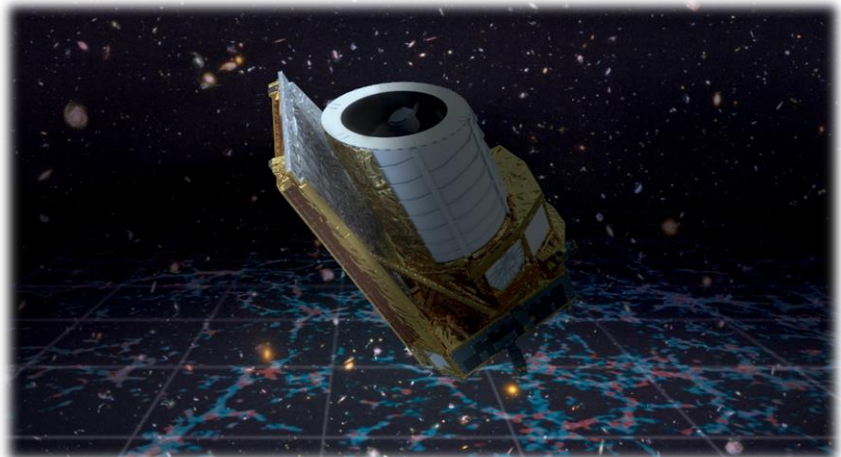


Einladung zum Physikalischen Kolloquium

07.06.2024 **Hendrik Hildebrandt, Ruhr Universität Bochum**
»Euclid - our cosmological wide-angle lens in space«
Einführung: M. Klute

Abstract: What is the cause of the accelerated expansion of the universe? This question is one of the greatest mysteries of 21st century physics. A so-called dark energy is commonly assumed to describe this behavior. However, we still have no fundamental physical description of this mysterious substance. Perhaps it is not a “substance” at all, but a sign



for the breakdown of general relativity. Only cosmological observations seem to be able to bring us closer to an understanding of this phenomenon. In particular, measurements of the distribution of matter in the cosmos using galaxy clustering and the weak gravitational lensing effect are promising. Exactly these measurements are the goal of the ESA/NASA Euclid satellite mission that was launched from Cape Canaveral on 1st July, 2023. In this talk, I will introduce the basics of these cosmological measurements, present current results from precursor projects that may already provide clues to the origin of dark energy, and give an outlook on the groundbreaking data we expect from Euclid in the near future as well as the technology behind it. Almost a year after the launch of Euclid, the current knowledge about this highly exciting field of research is thus summarised in the hope that Euclid will answer the question about the nature of dark energy or that it will overturn the standard cosmological model and teach us something completely new.

Der Vortrag findet **am Freitag, den 07. Juni 2024 um 15:45 Uhr im Otto-Lehmann-Hörsaal**, Physik-Flachbau (Geb. 30.22), KIT-Campus Süd statt.