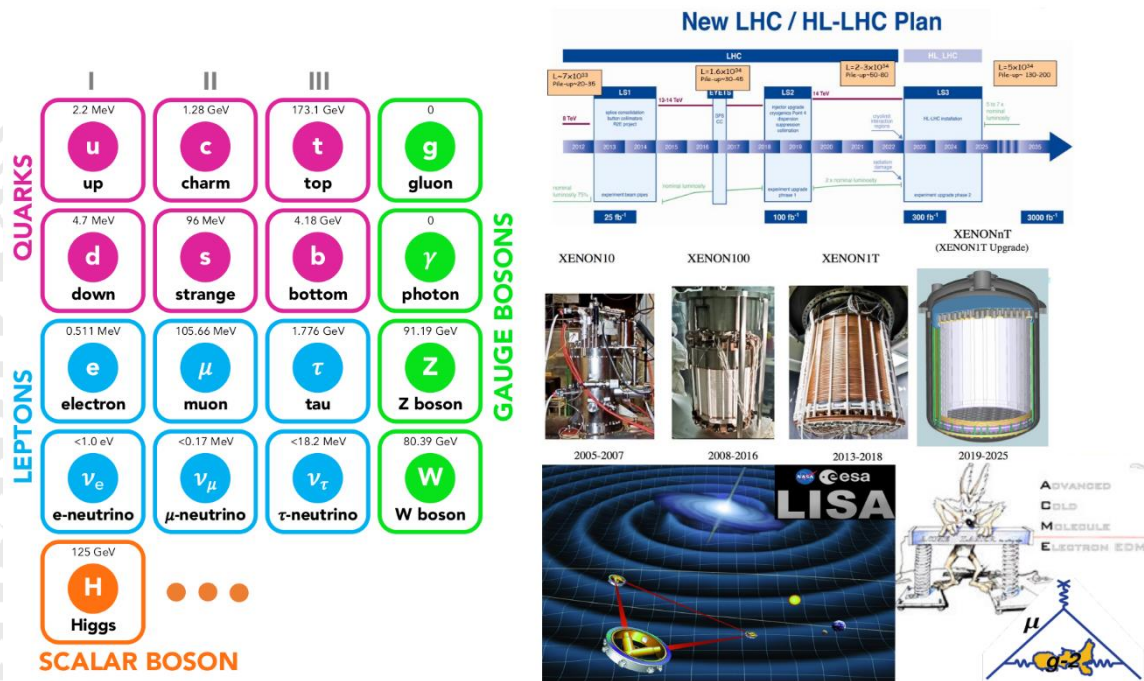


SONDERKOLLOQUIUM

AM 11. JULI 2024 UM 14:00 UHR
BIBLIOTHEK, WESTBAU PHYSIK



Confronting scalar extensions with
collider and cosmological data

DR. VENUS KEUS

DUBLIN INSTITUTE FOR ADVANCED STUDIES

Despite great agreement with experiment, the Standard Model of particle physics falls short of explaining several aspects of nature, such as the observed matter-antimatter asymmetry, the hierarchy of particle masses or the nature of Dark Matter. To account for these shortcomings, one needs to consider beyond Standard Model scenarios.

A common characteristic of almost all such scenarios is an extended scalar sector, suggesting that the observed scalar at the Large Hadron Collider is just one member of a larger Higgs family. More importantly, extended Higgs sectors could address all Standard Model shortcomings solely on their own. Therefore, studying scalar extensions is crucial in the search for the ultimate theory of nature. In this talk, I will further motivate these non-minimal Higgs frameworks and discuss their accessibility by current and future collider and cosmological experiments.