

Mathias Becker
Sebastian Schenk
Yong Xu

JOHANNES GUTENBERG
UNIVERSITÄT MAINZ



Theorie-Palaver

June 6, 2023 at 2 p.m.
Lorentz room (Staudingerweg 7, 5th floor)

Bibhushan Shakya
DESY

The Tachyonic Higgs and the Inflationary Universe

The Standard Model Higgs becomes tachyonic at high energy scales according to current measurements. This unstable regime of the Higgs potential can be realized in the early Universe during high scale inflation, potentially with catastrophic consequences. In this talk, we will discuss a crucial inherent feature of such configurations that has so far remained ignored: Higgs particle production out of vacuum induced by the rapidly evolving Higgs field, which gets exponentially enhanced due to the tachyonic instability. We will discuss various theoretical and observational implications of this effect.

Contact:
bmathias@uni-mainz.de

sebastian.schenk@uni-mainz.de

yonxu@uni-mainz.de