Particle Physics
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I N V I T A T I O N

as part of the Particle Physics Seminar

to the talk by

Benjamin FUKS

(LPTHE, Sorbonne Université)

on

"Toponium at the LHC: a new frontier in top-quark physics"

Abstract:

The top quark, the heaviest known elementary particle, has long been thought unable to form bound states. However, intriguing hints in recent LHC data suggest that toponium, a short-lived quasi-bound state of a top-antitop pair, might have left observable traces in data and possibly even been discovered.
In this talk, I will discuss why toponium is such a unique laboratory for studying the theory of the strong interaction in the non-relativistic regime, how modern techniques allow us to incorporate bound-state effects into state-of-the-art collider simulations, and what experimental signatures could reveal the presence of toponium in current and future LHC data. I will finally highlight recent results, ongoing searches and the exciting prospects for using toponium as a new window into the physics of the top quark.

Time: Tuesday, 4 November 2025, 4:15 p.m.

Location: Erwin-Schrödinger Lecture Hall, 1090 Vienna, Boltzmanngasse 5, 5th floor

Join Zoom Meeting - Meeting ID: 933 4269 3866 Passcode: 185096
https://univienna.zoom.us/j/93342693866?pwd=aUpTR0VJNUhJY2Q0ajdaKzI1YWVBQT09

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