

ΙΝΥΙΤΑΤΙΟΝ

as part of the Particle Physics Seminar

to the talk by

Axel MAAS

(University of Graz)

on

"Gauge Invariance and Particles"

Abstract:

On a formal, fundamental level in a non-Abelian gauge theory only gauge-invariant, composite fields can be rather than the elementarv fields employed in perturbation theory. While first at sight in contradiction to the phenomenological success of perturbation theory in electroweak physics, there is a deeper reason for both being compatible, Fröhlich-Morchio-Strocchi mechanism. working validity the lts and has been demonstrated explicitly in lattice simulations. However. even then room for new phenomena in the standard model. this leaves still Moreover, the standard model is special. Beyond the standard model these issues yield qualitative changes and affect such varied scenarios like grand-unified theories, supersymmetry, and quantum gravity.

The talk provides an overview of the underlying mechanisms, including some lattice results in their support, and finally highlights a few example applications.

Time: Friday, 9 May 2025, 2:00 p.m.

Location: Ernst Mach Lecture Hall, 1090 Vienna, Boltzmanngasse 5, 2nd floor

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