



INVITATION

as part of the Particle Physics Seminar

to the talk by

Christoph DLAPA

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on

***“Advances in gravitational-wave predictions through
quantum field theory methods”***

Abstract:

Motivated by the success of current gravitational-wave detectors, there has been significant progress in applying ideas from particle physics to the study of the inspiral problem for compact objects in classical general relativity. In particular, the methods and tools developed in perturbative quantum field theory arise most naturally when applied to the post-Minkowskian expansion, which is an expansion in Newton's coupling constant. In this talk, I will provide an overview of current approaches and show how the state of the art for non-spinning black-hole binaries has been achieved using an effective field theory of point particles. Importantly, I will also discuss how results obtained for scattering can be translated to the phenomenologically relevant case of merging black holes.

Time: Tuesday 17 March 2026, 4:15 p.m.

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

Join Zoom Meeting - Meeting ID: 933 4269 3866 Passcode: 185096
<https://univiennea.zoom.us/j/93342693866?pwd=aUpTR0VJNUhJY2Q0ajdaKzI1YWVBQQT09>