Fakultät für Physik
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E I N L A D U N G

im Rahmen des Seminars für Mathematische Physik

(Joint TU/UV Theory Seminar)

zum Vortrag

von

Alessia Platania

(Perimeter Institute, Canada)

über

„Non-perturbative strings, asymptotic safety, and the swampland“

Abstract:
Quantum gravity is undoubtfully one of the most important missing pieces in the understanding of the mathematical structure of our universe. The impossibility of consistently quantizing gravity via perturbative quantum field theory has led to a plethora of different proposals, from asymptotically safe gravity to non-local gravity, loop quantum gravity, and string theory. Different approaches face different problems and have succeeded in different areas. Yet, on the conceptual side, it is not obvious that all these frameworks are inequivalent or unrelated: some theories may be low-energy approximations of others, or could even provide different mathematical descriptions of the same physics. On the technical side, the knowledge gained in an approach could be useful to investigate certain aspects of others.
In this spirit, I will review progress in connecting and contrasting two theories: asymptotically safe gravity and string theory. Specifically, I will discuss how to test asymptotic safety using stringy swampland constraints, and how techniques developed in the context of asymptotically safe gravity can be exploited to compute cosmological higher-derivative corrections to all orders in string theory.

Zeit: Dienstag, **25.04.2023, 14.00 h**

Ort: TU - Sem.R. DA gruen 05 (Freihaus, TU Wien, Wiedner Hauptstrasse 8)

gez.: S. Fredenhagen, D. Grumiller, E. Batista, R. Ruzziconi