

Meetings of the Belgian Quantum Physics Initiative

Colloquium



Prof. Alexander Altland

University of Cologne

Advances in quantum chaos

Quantum chaos addresses the quantum mechanics of systems that are chaotic in the classical limit. Application fields include condensed matter physics, the physics of cold atomic and optical systems, particle physics, and gravity. On the quantum side, chaos manifests itself in strong correlations in spectra or wave functions, on the classical side in characteristic properties of phase space trajectories. How are these features connected? Up until recently, the answer to this question remained unknown. In this talk we will review how progress has been made, and we finally came to understand the emergence of quantum chaos out of classical principles. We will discuss how these insights are relevant to applications in many body quantum chaos, and specifically to recent developments in quantum gravity.

Thursday 8th DECEMBER 2022 AT 2 P.M.

COFFEE AND TEA WILL BE SERVED AT 3 P.M.

Two short talks will follow:

4:00pm: TBA

4:30pm: TBA