Mathematical Physics
Faculty of Physics
Boltzmanngasse 5
1090 Vienna, Austria

universität wien

I N V I T A T I O N

as part of the Mathematical Physics Theory Seminar

to the talk by

Paul ROMATSCHKE

(TU Vienna)

on

“What if phi^4 theory in 4 dimensions is non-trivial in the continuum?“

Abstract:

Traditionally, scalar phi^4 theory in four dimensions is thought to be quantum trivial in the continuum. In this talk, I critically review what quantum triviality is, and in particular which parts of the idea have actually been mathematically proved as opposed to just assumed to be true. I go on to exploit loopholes in the mathematical proofs, notably multi-component fields, to present a concrete calculation that avoids quantum triviality in scalar phi4 theory in the continuum. There is a price to pay to avoid triviality, but there are also potentially rich rewards. Your mileage will vary. Whatever the outcome, it is great fun to work on this subject!

Time: Tuesday, 4 November 2025, 2:00 p.m.

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

sgd. S. Fredenhagen, M. Sperling

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