



Kolloquium

des Fachbereichs Mathematik

Es spricht am Montag, 07. Juli 2025 um 16:30 Uhr

Professor Thomas Østergaard Sørensen Ph.D. (LMU München)

zum Thema:

"Atomic and molecular wavefunctions"

Abstrakt:

In 1926, Erwin Schrödinger published his 4 "Mitteilungen", all titled "Quantisierung als Eigenwertproblem", which, together with the work of Born, Heisenberg and Jordan from 1925, laid the foundation of Quantum Mechanics. In the first "Mitteilung", Schrödinger solved the Hydrogen problem, and introduced his "wavefunctions".

This year (2025) has been declared the "International Year of Quantum Science and Technology" by the United Nations General Assembly. In 100 years, (the Mathematics of) Quantum Mechanics has gone from finally solving the Hydrogen problem to become part of everyday life.

In this (Mathematics!) talk, I will explain what the problem was that Physics faced (with Hydrogen), and Schrödinger solved, and a little bit about where Mathematicians/Mathematical Physicists went from there. I will then describe some contributions on properties of wave functions for atoms & molecules more complicated than Hydrogen. Finally, I will mention some open problems.

The talk will be basic, and no (!) knowledge of Physics/Quantum Physics is needed. It is based on joint work with Maria & Thomas Hoffmann-Ostenhof (Vienna) and Søren Fournais (Copenhagen).

Der Vortrag findet im Sitzungssaal 8.122 der Fakultät Mathematik und Physik, Pfaffenwaldring 57, 70569 Stuttgart-Vaihingen statt.

Interessierte sind herzlich eingeladen!

Die Dozentinnen und Dozenten des Fachbereichs Mathematik