



Universität Stuttgart



Kolloquium des Fachbereichs Mathematik

Es spricht am Montag, 16. September 2019 um 10:30 Uhr

Professor Reika Fukuizumi

(Tohoku University)

zum Thema:

“Temperature effects and long time behaviour of Gross-Pitaevskii equation”

Abstract: The stochastic Gross-Pitaevskii equation is used as a model of Bose-Einstein condensation (BEC) at positive temperature. The equation is a complex Ginzburg-Landau equation with a trapping potential and an additive space-time white noise. A positive temperature effect, for example, the spontaneous vortex formation by a sudden quench in BEC (seen as a phase transition) is of great interest in Physics, and to analyze this phase transition from the point of view in statistical physics, the convergence of the physical system to the Gibbs equilibrium in large time is essential.

In this talk we will first give a review on the justification of the model equation and the convergence to the Gibbs equilibrium in 1D case, and present some recent studies on the 2D case, where a Wick renormalization is required to give a sense to the nonlinearity.

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

Die Dozentinnen und Dozenten des Fachbereichs Mathematik