



# PHYSIKALISCHES KOLLOQUIUM

des Fachbereichs Physik der Goethe-Universität Frankfurt zusammen  
mit dem SFB/TRR211 „*Stark wechselwirkende Materie unter  
extremen Bedingungen*“

Mittwoch, den 01.12.2021, 16 Uhr c.t.  
Physik-Hörsaal, Raum \_0.111, Max-von-Laue-Str. 1

[VIRTUELL via Zoom: LINK](#)

(Zoom ID: 284 828 6010, Passwort: 068695)



**Prof. Dr. Andreas Wipf**  
Friedrich-Schiller-Universität Jena

## *"Exotic Phases and Phase Transitions for Interacting Fermions"*

In the talk I will present new results about the critical flavor number in 3-dimensional Thirring models and on the existence or non-existence of inhomogeneous phases in Gross-Neveu-type theories in lower dimensions. The existence and value of a critical flavor number has been debated for almost 30 years. Only recently it has been possible to pin down this number with simulations based on chiral fermions.

The two-dimensional Gross-Neveu model at finite bayon density show spontaneous breaking of translational invariance in the limit where the number of flavors  $N$  gets large. We will discuss whether this breaking is only a large- $N$  artifact or whether inhomogeneous structures are seen for finite  $N$ . Results for various interacting Fermi systems are discussed.

Die Dozenten der Physik

local host: Prof. Dr. Marc Wagner [mwagner@th.physik.uni-frankfurt.de](mailto:mwagner@th.physik.uni-frankfurt.de)