

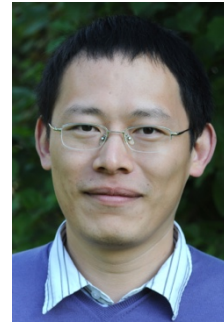


## PHYSIKALISCHES KOLLOQUIUM

*Referent:*

**Jun.-Prof. Dr. Hong-Hao Tu**

Correlated Electrons and Topology,  
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*Thema:*

**Tensor Network States in Quantum Many-Body Systems:  
Opportunities and Challenges** (Antrittsvorlesung)

*Zeit und Ort:*

Dienstag, 26.6.2018, 16:40 Uhr  
Rechnagel-Bau, Hörsaal REC/C213, Haeckelstr. 3

*Leiter:*

Dekan der Fakultät Prof. Dr. Roland Ketzmerick

*Kurzfassung:*

The efficient description of quantum many-body problems with strong interactions is an important open problem in physics. It has been known for a long time that the main curse of quantum many-body theory is the exponential growth of the Hilbert space dimension with respect to the number of constituting particles. Past decade has witnessed big progress in the development of tensor network states, a family of trial wave functions designed for describing the low-energy states of strongly correlated systems. In this presentation, I will introduce the basics of tensor network states, describe the opportunities that they have brought, and discuss the challenges that we are facing in this field.

*Biographie:*

After studying physics at Wuhan University and receiving PhD degree at Tsinghua University in China, Hong-Hao Tu moved to Germany in September 2009 as a postdoc at the Max-Planck-Institut für Quantenoptik in Garching. In October 2016, he moved to the Ludwig-Maximilians-Universität München for his second postdoc. Since October 2017, he has been the Junior Professor for Correlated Electrons and Topology at the Institute of Theoretical Physics at TU Dresden.

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