



Physics Colloquium

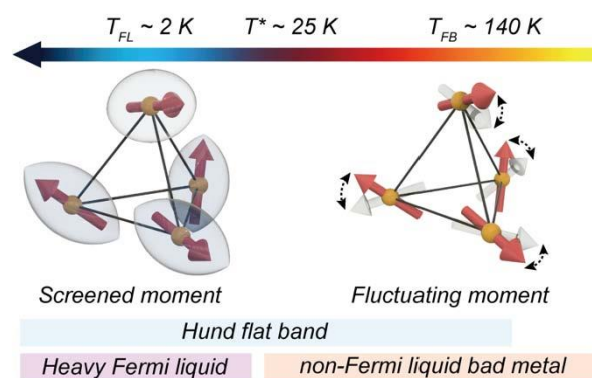
Tuesday, 20 May 2025 at 16:30

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Tensor networks for real materials

Tensor networks have turned into an indispensable tool in quantum many-body theory, but are mainly applied to model systems, where they have solved many important problems involving strong correlations in and out of equilibrium. I will present how recent progress in combining tensor networks with quantum embedding theories such as dynamical mean-field theory plus density functional theory for realism has allowed to go beyond models and obtain results on real materials that were inaccessible so far. I will exemplify this for LiV_2O_4 , a material whose behavior has puzzled solid state physicists for almost 30 years. Moreover, progress in complex-plane time-evolutions should pave the way for the calculation of very low frequency properties.



Host: Prof. Dr. Bernd Rosenow

Venue: Universität Leipzig, Faculty of Physics and Earth Sciences
04103 Leipzig, Linnéstraße 5, Small Lecture Hall

Everyone is welcome to a reception with coffee, drinks and cookies in the Aula following the talk.

For an up-to-date semester program, sign-up for the physics colloquium mailing list, and subscription to the digital calendars in CalDAV format, head to the colloquiums web page <https://www.physes.uni-leipzig.de/fakultaet/veranstaltungen>.

