



# TRR 80 Sonderseminar

Am Dienstag, den 17. Juli um 16:00 Uhr

spricht

***Prof. Dr. Fakher F. Assaad***

**Institut für Theoretische Physik und Astrophysik  
Universität Würzburg**

über das Thema

## ***Correlated topological insulators***

The interplay of spin-orbit coupling and correlations opens a new playground to study a variety of effects ranging from helical Luttinger liquids [1] to quantum spin systems generated by threading pi-fluxes through correlated topological insulators [2]. In this talk, I will concentrate on the Kane-Mele model supplemented by a Hubbard U. After discussing the salient features of the non-interacting model -- topological invariants and edge states -- I will concentrate on the above mentioned correlations driven effects. The results obtained are based on large scale quantum Monte Carlo simulations which turn out to be free of the infamous sign problem for this specific model [3,4].

[1] M. Hohenadler and F. F. Assaad, Phys. Rev. B 85, 081106(R) (2012)

[2] F. F. Assaad, M. Bercx, M. Hohenadler, arXiv:1204.4728

[3] M. Hohenadler, Z. Y. Meng, T. C. Lang, S. Wessel, A. Muramatsu and F. F. Assaad, Phys. Rev. B 85, 115132 (2012)

[4] M. Hohenadler, T. C. Lang and F. F. Assaad, Phys. Rev. Lett. 106, 100403 (2011)

Gäste sind herzlich willkommen.

Der Vortrag findet im Seminarraum S-288 / Institut für Physik, Universität Augsburg statt.

Gastgeber: Prof. Dr. Thilo Kopp  
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