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Institute of Solid State Physics

Wiedner Hauptstraße 8-10/138, 1040 Wien, AUSTRIA – T: +43-1-58801-13801 / F: +43-1-58801-13899 – E: sekretariat@ifp.tuwien.ac.at

# EINLADUNG zum SONDERSEMINAR Fakultät für Physik

## Excitonic condensation of strongly correlated electrons

**Dr. Jan Kuneš**

Institute of Physics, Academy of Sciences  
Prague, Czech Republic

Host: Karsten Held  
Termin: **Donnerstag, 18 Juni 2015, 10 Uhr**  
Ort: Institut für Festkörperphysik, TU Wien  
Wiedner Hauptstraße 8-10, 1040 Wien  
Konferenzraum des Dekanats DA09E10, 9. OG  
(grüne Leitfarbe, Aufzug bis 8. OG)

Spontaneous symmetry breaking is one of the core concepts of condensed matter physics. Besides geometrical symmetries, abstract gauge symmetries can be broken, giving rise to phenomena such as superconductivity. Excitonic condensation provides another example of breaking an abstract symmetry. Proposed in 1960's it has been only recently that an equilibrium exciton condensate was realized in bi-layer structures of weakly interacting electrons. In this talk, I will address the exciton condensation from the strong coupling perspective. I will present some numerical results on the two-band Hubbard model as well as material specific calculations and discuss promising materials to realize this phenomenon.

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