



e-conversion



# Seminarankündigung

**Dienstag, 1. Dezember 2020  
17:00 Uhr**

**ONLINE via ZOOM**

## **“Spin interactions in van der Waals heterostructures”**

Two dimensional materials offer unprecedented opportunities for spintronics research. The main advantages of van der Waals heterostructures are (i) the possibility to control the spin properties of electrons electrically very efficiently by gating, and (ii) tailoring the spin properties---spin-orbit and exchange couplings---by the proximity effect. In this talk, I will present the current understanding of the spin-orbit coupling in graphene-based heterostructures, and introduce some new ideas how to turn the spin-orbit coupling on and off, and even how to swap spin-orbit and exchange interactions in ex-so-tic heterostructures which comprise strong spin-orbit as well as ferromagnetic layers [1]. Finally, I will discuss ramifications of the spin proximity effects for topological transport in graphene [2].

[1] K Zollner et al, Phys. Rev. Lett. 125, 196402 (2020) [2] P. Högl et al, Phys. Rev. Lett. 124, 136403 (2020)

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