

# POZVÁNKA

na seminář oddělení 15 Fyzikálního ústavu AV ČR, v.v.i.

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Seminář se koná

**v pondělí 16. dubna 2018 ve 11:00**

v zasedací místnosti budovy A (vedle knihovny) Fyzikálního ústavu,  
Cukrovarnická 10, Praha 6.

Na programu je přednáška

## **Testing Topological Protection of Edge States in Hexagonal Quantum Spin Hall Candidate Materials**

kterou prosloví

**Benedikt Scharf**

Universität Würzburg

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### Abstrakt

Due to their large bulk band gap, bismuthene, antimonene, and arsenene on a SiC substrate offer intriguing new opportunities for room-temperature quantum spin Hall (QSH) applications. Although edge states have been observed in the local density of states (LDOS) of bismuthene/SiC, there has been no experimental evidence until now that they are spin-polarized and topologically protected. Here, we show that for experimentally relevant armchair nanoribbons, we find a distinct behavior of the gap induced in the QSH edge states for out-of-plane magnetic fields (a few meV) versus in-plane magnetic fields (negligible gap) which is the hallmark of their topological origin. Further, we predict experimentally testable fingerprints of this behavior in the LDOS and in ballistic magnetotransport. While we focus on bismuthene/SiC, our main findings are also applicable to other honeycomb-based QSH systems.

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Program dalších seminářů je na <http://fzu.cz/oddeleni/seminare/15>