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**Dimensional crossover and cold-atom realization of gapless and semi-metallic Mott insulating phases** PETER P. ORTH, MATHIAS SCHEURER, Karlsruhe Institute of Technology (KIT), STEPHAN RACHEL, Dresden University of Technology — We propose a realistic cold-atom setup which allows for a dimensional crossover from a two-dimensional quantum spin Hall insulating phase to a three-dimensional strong topological insulator phase by simply tuning the hopping between the layers. We further employ cluster slave-rotor mean-field theory to study the effect of additional Hubbard onsite interactions that give rise to various spin liquid-like phases such as gapless and semi-metallic Mott insulating states.

Peter P. Orth
Karlsruhe Institute of Technology (KIT)

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