

THE BATSHEVA DE ROTHSCHILD SEMINAR ON TOPOLOGY MEETS DISORDER AND INTERACTIONS: **PRESENT CHALLENGES, FUTURE PROMISES** 27-31 MAY, 2018

RAMON INN MITZPE RAMON

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Symmetry Protected Topological Metals

Alex Kamenev

Sharply defined topological quantum phase transitions are not limited to states of matter with gapped electronic spectra.

Such transitions may also occur between two gapless metallic states both with extended Fermi surfaces. The transition is characterized by a discontinuous, but not quantized, jump in an off-diagonal transport coefficient. Its sharpness is protected by a symmetry, such as e.g. particle-hole, which remains unbroken across the transition. I will present a simple model of this phenomenon, based on 2D \$p+ip\$ superconductor with an applied super current, and discuss its geometrical interpretation.