

## Poster-2-26

**Thermodynamical Signatures in the Superconducting Haldane Model**Bernhard Lüscher*University of Zürich*

Inspired by experimental results of the Kagome materials  $AV_3Sb_5$ , we want to gain a better understanding of the behavior of thermodynamical quantities, especially the thermal conductivity, in  $C_6v$ -symmetric systems when transitioning into the superconducting state. Particularly, we look at the evolution of the thermal hall conductivity for different superconducting order parameters when its normal state value is non-zero. To this end we examine the spinful Haldane model without inversion symmetry breaking ( $M=0$ ). Even though in this case the Chern number is zero for each band, we can get a non-vanishing Hall conductivity by placing the chemical potential inside a band. Introducing attractive onsite, nearest-neighbor and next-nearest-neighbor couplings we map out the leading instabilities and examine the behavior of the thermodynamical quantities across the different gap openings.