**Kondo hybridization-driven topological phase transition in the Weyl semimetal candidate CeAlGe**

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CeAlGe crystalises in tetragonal structure *I*41*md*, where the spatial-inversion symmetry is broken, and is expected to exhibit Weyl fermions near a Fermi surface that becomes more stable by broken time-reversal symmetry [1]. It has been known that the magnetic ground state and relevant topological properties of CeAlGe depend on the chemical stoichiometry. For example, CeAlGe grown by the flux method yields 5 ~ 15% additional Al in the Ge site and exhibits a commensurate antiferromagnetic order below *T* = 5.1 K [2], whereas the crystal grown by floating-zone methods with 30 bar of Ar gas (*p*=30 bar) is resulted in stoichiometric composition and exhibits an incommensurate order below *T* = 4.4 K in which topological Hall effects are induced by external magnetic fields [3]. In this presentation, we show the experimental results of newly synthesised CeAlGe using the optical floating-zone furnace with lower Ar pressure of *p*=5 bar. Our neutron diffraction and electrical Hall transport experiments revealed that the topological magnetism is still stabilised with shorter periodicity. Furthermore, we performed electrical transport experiments under pressure up to 2 GPa. Given all experimental results obtained using flux-grown and two floating-zone-grown CeAlGe crystals, we will discuss the mechanism of topological magnetism with respect to the Kondo coupling strength.

[1] G. Chang et al., Physical Review B, **97**, 01104 (2018)

[2] T. Suzuki et al., Science, **365**, 377-381 (2019)

[3] P. Puphal et al., Physical Review Letters, **124**, 017202 (2020)

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