

## MS24-05 | SUPERSPACE MAGNETIC STRUCTURE AND TOPOLOGICAL CHARGES IN WEYL SEMIMETAL CeAlGe

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A recent first principles theoretical calculations have predicted that the members of the chiral RAlGe (R = Pr, Ce) system (I41/m<sub>d</sub> space group) can be new magnetic Weyl semimetals [1]. The successful single crystal growth of CeAlGe and bulk magnetic characterizations have been recently reported [2]. Here we present the results of the single crystal and powder neutron diffraction studies of CeAlGe [3]. We have found that the one of the most symmetric solutions for the magnetic structure in a superspace magnetic group results in the interesting topological spin textures, which will be discussed.

[1] G. Chang, B. Singh, S.-Y. Xu, G. Bian, S.-M. Huang, C.-H. Hsu, I. Belopolski, N. Alidoust, D. S. Sanchez, H. Zheng, H. Lu, X. Zhang, Y. Bian, T.-R. Chang, H.-T. Jeng, A. Bansil, H. Hsu, S. Jia, T. Neupert, H. Lin, and M. Z. Hasan, *Physical Review B* 97 (2018).

[2] P. Puphal, C. Mielke, N. Kumar, Y. Soh, T. Shang, M. Medarde, J. S. White, and E. Pomjakushina, *Physical Review Materials* (2019).

[3] P. Puphal et al, to be published (2019).