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Magnetic Weyl Kondo semimetal phase in a topological Kondo insulator heterostructure SEULGI OK, ASHLEY COOK, TITUS NEUPERT, Univ of Zurich — We study a layered three-dimensional heterostructure in which two types of Kondo insulators are stacked alternatingly with different thicknesses of the individual layers. We compute the topological phase diagram of this heterostructure for a model where one of the two Kondo insulators is SmB_6 and the other one is YbB_6. Depending on the layer thickness we find a strong topological insulator, a weak topological insulator, and a trivial insulator phase. Motivated by evidence of surface ferromagnetism in SmB_6[1], we add finite magnetization along the {001} crystallographic direction, and characterize the electronic properties of the heterostructure as a function of YbB_6 layer thickness and magnetization strength. We find Weyl semimetal phases distinguished by different numbers of Weyl nodes. We explore the feasibility of experimentally realizing this magnetic Kondo Weyl semimetal by computing the bare and RPA magnetic susceptibility for the heterostructure.

[1]Y. Nakajima, P. Syers, X. Wang, R. Wang and J. Paglione, *Nature Phys.* 12, 213-217 (2016)

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