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Infrared and magneto-optical studies of heavy fermion skutterudites $YbFe_4Sb_{12}$ and $CeRu_4Sb_{12}$ L.W. KOHLMAN, S.V. DORDEVIC, The University of Akron, K.S.D. BEACH, Boston University, D.N. BASOV, R. BAUMBACH, M.B. MAPLE, University of California, San Diego, R. TUNG, Y.J. WANG, National High Magnetic Field Lab, N. TAKEDA, University of Tokyo, Japan — We will report infrared and magneto-optical results on two heavy fermion skutterudites $YbFe_4Sb_{12}$ and $CeRu_4Sb_{12}$. Detailed temperature dependence of infrared spectra will be presented for both compounds. In addition, magneto-transmission measurements on $YbFe_4Sb_{12}$ in magnetic field as high as 33 Tesla, and magneto-reflection measurements on $CeRu_4Sb_{12}$ in 17 Tesla field will be reported. The results reveal suppression of heavy fermion state with magnetic field, and recovery of a more conventional metallic state. In particular, the effective mass of charge carriers is gradual diminished. On the other hand, hybridization gap is much more insensitive to the application of magnetic field.

S.V. Dordevic
The University of Akron

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