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Anisotropic Hall Effect in Single Crystal Heavy Fermion YbAgGe SERGEY BUD'KO, EMILIA MOROSAN, PAUL CANFIELD, Ames Laboratory and Dept. of Physics, Iowa State University — Temperature- and field-dependent Hall effect measurements are reported for YbAgGe, a heavy fermion compound exhibiting a field-induced quantum phase transition. The low temperature, fielddependent measurements reveal well defined, sudden changes with applied field; in specific for $H \perp c$ a clear local maximum that sharpens as temperature is reduced below 2 K and that approaches a value of 45 kOe - a value that has been proposed as the T = 0 quantum critical point. Similar behavior was observed for $H \parallel c$ where a clear minimum in the field-dependent Hall resistivity was observed at low temperatures. Although at our base temperatures it is difficult to distinguish between the field-dependent behavior predicted for (i) diffraction off a critical spin density wave or (ii) breakdown in the composite nature of the heavy electron, for both field directions there is a distinct temperature dependence of a feature that can clearly be associated with a field-induced quantum critical point at T = 0 persisting up to at least 2 K.

> Sergey Bud'ko Ames Laboratory

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