OCCURRENCE OF TWO QUANTUM CRITICAL POINTS IN Yb_2Pd_2Sn OR, Yb SYSTEMS DO NOT BEHAVE MIRROR-LIKE TO Ce COMPOUNDS

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9.7 cm

Ce and Yb compounds have been proven as ideal playground to explore the principal features of competing electronic ground states and peculiarities associated with a quantum critical point (QCP). Here, we report on the first discovery of *two* consecutive, pressure driven QCP's. They emerge in a non-Fermi liquid environment at the origins of a dome-like, single magnetic phase in Yb_2Pd_2Sn at pressures $p_{c1} \approx 1$ GPa and $p_{c2} \approx 4$ GPa. This unique behavior of Yb compounds is supposed to result from mutually competing, pressure modified energy scales, which in case of Yb_2Pd_2Sn cause a sign change of the pressure dependence of the Kondo temperature T_K and magnetic ordering temperature T_N. Our finding turns out to be inimitable for Yb compounds, unlikely occurring in any Ce system. We present a variety of temperature, field and pressure dependencies of bulk properties, substantiating this conclusion.

13.4 cm

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