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Critical behaviour near magnetic phase transition in CeCuGe

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CeCuGe is one of the few compounds to order ferromagnetically at low temperatures. The compound has been observed to exhibit paramagnetic-ferromagnetic (PM-FM) magnetic transition, $T_C = 10$ K. This magnetic ordering has been observed from specific heat (C_p), magnetization, ($M(T,B)$) and resistivity data. Isothermal magnetization of a hexagonal, highly ordered CeCuGe were measured in order to study the critical scaling behavior in the vicinity of magnetic ordering in this polycrystalline compound. From the analyses of the magnetization data, T_C was confirmed using modified Arrott plot technique. It was also observed from the critical exponents, beta, gamma and sigma corresponding to the spontaneous magnetization, initial susceptibility and isothermal magnetization were obtained, respectively. The resulting critical exponents obtained reveals that the system falls within Heisenberg and 3-D Ising model.

**Level (Hons, MSc,
 PhD, other)?**

PhD

**Consider for a student
 award (Yes / No)?**

No

**Would you like to
 submit a short paper
 for the Conference
 Proceedings (Yes / No)?**

Yes

Primary author: Ms SONDEZI-MHLUNGU, Buyi (University of Johannesburg)

Co-author: Prof. STRYDOM, Andre (University of Johannesburg)

Presenter: Ms SONDEZI-MHLUNGU, Buyi (University of Johannesburg)

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