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Pressure-induced quantum critical behavior in the heavy-fermion compound $CeCoGe_{2.2}Si_{0.8}$ J. LARREA JIMENEZ, M. MARTELLI, S. PASCHEN, Institute of Solid State Physics, Vienna University of Technology, Vienna, Austria, J. TEYSSIER, Département de Physique de la Matière Condensée, Université de Genève, Switzerland, A. STRYDOM, University of Johannesburg, H. RONNOW, Laboratory for Quantum Magnetism, École Polytechnique Fédérale de Lausanne, Switzerland — The pressure-tuned quantum critical point (QCP) of the antiferromagnetic heavy-fermion compound $CeCoGe_{2.1}Si_{0.9}$ was claimed to be dominated by different effects on both sides of the QCP: on the magnetic side spin fluctuations govern the criticality, while on the non-magnetic side the criticality is dominated by disorder that quenches the spin fluctuations. Here we study high-quality $CeCoGe_{2.2}Si_{0.8}$ samples with residual resistance ratios four times larger than those of the previously investigated $CeCoGe_{2.1}Si_{0.9}$ samples. Interestingly, while DC magnetic susceptibility measurements show that the Néel temperature of $T_N = 4$K at zero pressure is only slightly reduced by pressure up to 3.0 kbar, a much stronger decrease is observed for the specific heat anomaly. We will present electrical resistivity and specific heat measurements up to 15 kbar and down to 0.05 K, and establish the pressure – temperature phase diagram for $CeCoGe_{2.2}Si_{0.8}$. The critical behavior shall be compared to the one observed for both $CeCoGe_{2.1}Si_{0.9}$ and the pure reference compound $CeCoGe_3$.

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