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Electric transport measurements on micro-structured $CePt_2In_7$ single crystals in a diamond anvil cell J. KANTER, P. MOLL, Laboratory for Solid State Physics, ETH Zurich, Switzerland, F. RONNING, E. BAUER, P. TOBASH, J. THOMPSON, Los Alamos National Laboratory, Los Alamos, New Mexico, USA, B. BATLOGG, Laboratory for Solid State Physics, ETH Zurich, Switzerland — We report Shubnikov–de Haas and resistivity measurements of $CePt_2In_7$ samples under hydrostatic pressures using a diamond anvil cell. $CePt_2In_7$ belongs to the $Ce_mM_nIn_{3m+2n}$ heavy fermion family. Compared to the $CeMIn_5$ members of this group, the structure of $CePt_2In_7$ has a more two dimensional character, but also exhibits an antiferromagnetically ordered and a superconducting phase. Upon increasing pressure the AFM order is suppressed with the Néel temperature extrapolating to a quantum critical point. The fluctuations associated with the QCP are thought to stabilize the unconventional superconducting phase. To investigate the weight of the different scattering channels the anisotropy of the resistivity above the Néel temperature was measured for various applied pressures. Shubnikov–de Haas measurements were conducted to deduce the changes in the effective electron masses in the AFM and superconducting phases under applied hydrostatic pressure. To this end we developed a method to conduct four terminal resistance measurements on micro-structured samples inside a diamond anvil cell.

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