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Pressure-induced superconductivity and effective mass enhancement near antiferromagnetic quantum critical point in $CePt_2In_7$ ERIC D. BAUER, Los Alamos National Lab, H. O. LEE, V. A. SIDOROV, N. KURITA, K. GOFRYK, F. RONNING, LANL, TUSON PARK, Department of Physics, Sungkyunkwan University, R. MOVSHOVICH, J. D. THOMPSON, LANL — The discovery of the $CeMIn_5$ (M=Co, Rh, Ir) family of heavy fermion superconductors has been a watershed for the field of heavy fermion physics. These materials have not only provided an effective means to explore the rich interplay of magnetism and superconductivity (e.g., $CeRhIn_5$), the development of the heavy fermion state (e.g., $Ce_{1-x}La_xCoIn_5$), and quantum criticality (e.g., $CeRhIn_5$), but have also provided compelling evidence that structural tuning plays an essential role in enhancing their superconducting properties. I will present our discovery of superconductivity in a new, more two-dimensional member of this $Ce_mM_nIn_{2m+3n}$ family, $CePt_2In_7$, which displays the coexistence of antiferromagnetism and superconductivity and an enhancement of the effective mass under pressure near an antiferromagnetic quantum critical point that is remarkably similar to $CeRhIn_5$.

Eric D. Bauer
Los Alamos National Lab

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