

Abstract Submitted
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Uniaxial Pressure and the Superconducting Transition of CeIrIn₅¹ OWEN DIX, ADRIAN SWARTZ, RENA ZIEVE, UC Davis, TODD SAYLES, BRIAN MAPLE, UCSD — We measure the superconducting transition temperature of CeIrIn₅ with applied uniaxial pressure. Heat capacity shows almost no shift in T_c as pressure is applied along the c -axis, contrary to the large decrease expected from earlier thermal expansion measurements. With a -axis pressure, however, T_c increases about 20 mK per kbar. These results indicate that another factor besides the c/a ratio has a strong effect on T_c . Furthermore, applied pressure along either crystal axis strongly reduces the size of the heat capacity transition. We will also discuss the effect of uniaxial pressure on the resistive transition, which at ambient pressure occurs at a temperature well above the heat capacity transition. Finally, we present x-ray diffraction measurements correlating our applied pressures with changes in the crystal lattice constants.

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