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Comparison of Resistivity and Superfluid Response in Thin CaY-BCO Films[1] STANLEY STEERS, ADAM AHMED, THOMAS LEMBERGER, The Ohio State University — Resistivity drops to negligible levels at temperatures significantly above those at which superfluid density appears for two-dimensional samples of Ca-doped YBCO. The temperature offset between the disappearance of resistivity and the onset of superfluid density, as measured by low-frequency mutual inductance experiments, depends upon T_c as measured by the appearance of superfluid density, getting bigger as T_c decreases and reaching a maximum as superfluid response disappears near the superconductor-insulator transition while still exhibiting a resistive transition. The offset vanishes at the maximum T_c.

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