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Susceptibility Measurements Support High T_c Superconductivity in the Ba-La-Cu-O System.

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Abstract. — The susceptibility of ceramic samples in the metallic Ba-La-Cu-O system has been measured as a function of temperature. This system had earlier shown characteristic sharp drops in resistivity at low temperatures. It has been found that the susceptibility for small magnetic fields of less than 0.1 Tesla becomes diamagnetic at somewhat lower temperatures than the resistivity drop. The highest-temperature diamagnetic shift occurs at 33 ± 2 K, and may be related to shielding currents at the onset of percolative superconductivity. The diamagnetic susceptibility can be suppressed with external fields of 1 to 5 Tesla.

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