

Abstract Submitted
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The stiffnessometer: a magnetic-field-free superconducting stiffness meter, and its application to the cuprates ITZIK KAPON, AMIT KEREN, TECHNION — We developed a new method to measure the stiffness ρ_s of a superconductor without applying magnetic field. The method is based on the London equation $\mathbf{J} = -\rho_s \mathbf{A}$, where \mathbf{J} is the current density and \mathbf{A} is the vector potential. Using a rotor free \mathbf{A} and a \mathbf{J} measurement we determine ρ_s . We apply the method to $\text{La}_{2-x}\text{Sr}_x\text{CuO}_4$ and find some surprising results.

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