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Investigation of the Critical Current Density of YBaCuO high-temperature Superconductor Ceramic

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Abstract: The method of high harmonics is used to investigate penetration of low magnetic fields within the $Y_1Ba_2Cu_3O_7$ high-temperature superconductor ceramic. Given experimental results are explained by the modal dependencies between the value of critical current density and the magnetic induction B: $j_c(B) = j_c(0)\{\frac{\{B_0^2\}}{\{B_0^2 + B^2\}}\}$.

Key Words: High-temperature superconductors, critical current density, low magnetic field, high harmonics.

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