

## Observation of the Nonlinear Meissner Effect

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The linear magnetic field dependence of the magnetic penetration depth, known as the nonlinear Meissner effect, is a key consequence of the theory of unconventional superconductivity [1]. The effect occurs due to the shifting of quasiparticle states in the presence of a field induced superfluid velocity. However, its absence in the high temperature cuprate superconductors has been a mystery for almost 30 years [2]. Presented here are our recent measurements on LaFePO and CeCoIn<sub>5</sub> that are the first successful observations of this effect [3]. Additionally, we demonstrate a new way of analysing  $\Delta\lambda(T, H)$  that can distinguish nodes from deep gap minima. These results confirm the original theory and further establish the nonlinear Meissner effect as a tool for probing the gap structure of unconventional superconductors.

## References

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