**Quantum Oscillations in YBCO**

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**Introduction**

A plethora of activity followed the first observation of quantum oscillations in underdoped YBCO [1] to solve what the underlying electronic structure is. With results from different measurement probes over the years the observed Fermi surface pocket is now understood as a nodal pocket reconstructed by charge density wave order [2]. We explore whether oxygen treatment of samples to induce chain disordering could have an effect on the electronic structure, and therefore on the Fermi surface.

**Experimental**

High-purity single-crystal YBa2Cu3O6.55 samples were grown by self-flux method, and screened in high fields for sample purity indicated by large-amplitude quantum oscillations observed for these samples. The proximity detector oscillator (PDO) technique was employed to measure contactless resistivity, and capacitive torque magnetometry was employed to measure magnetic torque over a range of temperatures using the 45T Hybrid magnet equipped with a 3He cryostat.

**Results and Discussion**

We successfully measured quantum oscillations in the contactless resistivity of samples after chain disordering by oxygen treatment. We saw a reduction of the absolute amplitude of the oscillations compared to before chain disordering by oxygen treatment.

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**References**

[1] Doiron-Leyraud, N., *et al*., *Nature*, **447**, 565-568 (2007).

[2] Sebastian, S. E., *et al*., *Nature*, **511**, 61-64 (2014).