non-uniform suppression, implying that different orbits (corresponding to different θ angles) experience different scattering strengths. Through detailed analysis, the authors are able to extract the φ dependence of Γ.

They find $\Gamma = \Gamma_0 + aT^2 + bT\cos^2(2\varphi)$. The isotropic part is standard for metals: the sum of impurity scattering (Γ_0) and electron–electron scattering (aT^2). The last term is the anomalous one, and the focus of our interest. The linear T dependence of the in-plane resistivity comes from this term, as shown by the authors who use their extracted $\Gamma(\varphi)$ to calculate $\rho(T)$; they find excellent quantitative agreement with the measured resistivity[2]. Note that in $Tl_2Ba_2(Ca_0)Cu_1O_{6+\delta}$ (Tl-2201) samples such as theirs, where $p = 0.25$, the resistivity is not perfectly linear, but best described by $\rho = \rho_0 + AT^2 + BT$ (refs 3,4). Their key finding is that the anomalous scattering is profoundly anisotropic. It goes to zero at $\varphi = \pi/4$ and is maximum at $\varphi = 0$. This angle dependence mimics the *d*-wave superconducting gap, $\Delta = \Delta_0\cos(2\varphi)$. As anisotropic pairing comes from anisotropic interactions, it is natural to ask whether the anomalous scattering and the superconductivity share a common origin. What might be the nature of this underlying interaction? Antiferromagnetic fluctuations certainly come to mind as one possibility, given their known tendency to favour *d*-wave pairing[5].

In pursuing this connection, the authors highlight two experimental facts. First, the appearance of a linear-T term in the resistivity — absent at $p = 0.3$ (ref. 6) but present at $p = 0.25$ (refs 3,4) — coincides roughly with the onset of superconductivity at $p = 0.27$, as sketched in Fig. 1. This 'matching of onsets' reinforces the link suggested by the 'matching of anisotropies'. Secondly, the linear T dependence persists to millikelvin temperatures[3,4]. If it is caused by the thermal excitation of magnetic fluctuations, these must have a vanishing characteristic energy — the standard signature of a quantum critical point (QCP), the zero-temperature phase transition between distinct ground states[7]. The only unambiguous QCP in that region of the phase diagram is the superconducting QCP itself (red circle in Fig. 1), not a magnetic QCP. Note, however, that it would not be the first time that a magnetic QCP is avoided in favour of superconductivity[8,9].

In future work, it will be of great interest to track the anomalous scattering as a function of p, in particular as p is reduced. The linear term in the resistivity becomes much stronger near optimal doping ($p = 0.16$) — roughly by a factor 10 — as does the superconducting gap Δ_0 — by a factor 6 or so (a 'matching of magnitudes'?). Will the characteristic angle dependence of Γ follow suit? Below optimal doping ($p < 0.16$), the system enters the mysterious 'pseudogap phase', the subject of much speculation and debate[1]. There, the Fermi surface itself seems to be destroyed[10] — in anisotropic fashion, with maximal effect where scattering is strongest (see Fig. 1). Might this correlation lead us to the elusive underlying interactions of the pseudogap phase?

We can bet on one thing: the magneto-transport will be profoundly altered, and whether electrons can even travel around closed orbits remains to be seen. In such a context, AMRO — regarded as a property of a coherent Fermi surface — may not survive. Conversely, if AMRO is indeed observed, much of the ongoing speculation will be laid to rest.

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Coherence in molecular nitrogen

MARKUS ARNDT

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In this News & Views piece, reference 3 contained the wrong page numbers. The correct reference is:

3. Rolles, D. *et al. Nature* **437,** 711–715 (2005).