Erratum: Magnetic quantum oscillations in doped antiferromagnetic insulators [Phys. Rev. B 77, 132403 (2008)]

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Our expression for the oscillating part of the magnetic moment $\tilde{M}(\mathbf{B})$, Eq. (7), based on the energy spectrum Eq. (6) originally derived by Ramazashvili,[2] predicts the peculiar dependence of dHvA magneto-oscillation amplitudes, M_r, on the azimuthal in-plane angle Φ between the magnetic field $\mathbf{B}$ and the magnetization axis, $M_r \propto \cos[\pi r(m_x m_y)^{1/2} \tan(\Theta)\cos(\Phi)/m_e]$ (Θ is the polar angle between the out-of-plane direction and $\mathbf{B}$ in two-dimensional doped antiferromagnetic insulators).

Here we would like to point out that this expression as well as all following equations are restricted to moderate magnetic fields, $B < B_{SF}$, where B_{SF} is the spin-flop field of the antiferromagnetic background. In sufficiently strong fields $B > B_{SF}$ the magnetization axis rotates remaining perpendicular to $\mathbf{B}$, so that our original conclusion should be altered. All our equations can be still applied but with $\Phi = \pi/2$ and $B_{\|} = 0$. Hence the g factor is near absent for *any field orientation* in this strong-field regime. In high temperature superconductors the spin-flop field is relatively small $B_{SF} < 10$ Tesla.[3] Therefore the absence of the g factor, recently observed in quantum oscillation experiments[4] for $B > 30$ Tesla, is in agreement with the earlier theoretical predictions.[1,2,5]

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