

# Antiferromagnetic conductors with small carrier pockets

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An essential dependence of the electron g-factor on the quasiparticle momentum is a fundamental and, so far, largely overlooked property of antiferromagnetic conductors. In antiferromagnets with small carrier pockets, it may give rise to a number of interesting phenomena such as electric excitation of spin resonance or, under certain conditions, complete quenching of the Zeeman splitting in a quantizing magnetic field. This phenomenon may also allow to pinpoint a detected carrier pocket in the Brillouin zone with the help of magnetic quantum oscillations, a hitherto missing diagnostic opportunity. I will discuss the symmetry underpinnings of these effects, and some of their experimental consequences.

The predictions may be relevant to antiferromagnetic conductors from chromium to electron- and hole-doped cuprates, borocarbides, iron pnictides, as well as organic and heavy fermion materials.