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Antiferromagnetic ground state in fullerene magnet with orbital ordering

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We will discuss the antiferromagnetic ground state in the α'–TDAE–C_{60}, where the orientation of C_{60} cage orders $ferro--rotatively$ along all neighboring directions. Field dependent magnetic torque responses indicate the existence of antiferromagnetic ordering with $T_N \sim 8$K and magnetic anisotropy. Using the low–frequency ($f \sim 3$GHz) and the low–temperature ($T \sim 0.5$K) ESR, we succeeded in observing the antiferromagnetic resonance below T_N. We will also show the case of ferromagnetic α–phase and discuss the correlation between the magnetism and the orbital ordering of fullerene cage.