

Abstract Submitted  
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**Theory of anomalous magnetotransport in triple quantum dots<sup>1</sup>**

BENJAMIN D'ANJOU, WILLIAM A. COISH, McGill University — Magneto-transport measurements on a triple quantum dot ring have recently shown anomalous quantum oscillations with dominant frequencies separated by a factor of three in magnetic flux [1]. Such oscillations, suggestive of a one-third periodicity in the flux quantum, are usually not observed in larger mesoscopic rings in which only larger periods are observed. We develop a microscopic transport model for the triple dot and show that the anomalous oscillations can dominate the transport behavior under certain conditions. Furthermore, we discuss the range of validity of our model by studying dephasing due to broadening and electric dipole interactions.

[1] L. Gaudreau et al., Phys. Rev. B 80, 075415 (2009)

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