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**Majorana zero modes choose Euler numbers - revealed by full counting statistics** DONG E. LIU, Microsoft Research Station Q, ALEX LEVCHENKO, Michigan State University, ROMAN M. LUTCHYN, Microsoft Research Station Q — We consider a quantum dot (QD) coupled to a Majorana zero mode and two normal leads and study transport properties of the system. We investigate the full counting statistics of charge tunneling events which allows one to extract information about current fluctuations in the system. Using Keldysh path-integral approach, we compute the cumulant generating function for the quantum dot with Majorana and normal lead couplings. We first consider a non-interacting spinless QD, and find that for the symmetric dot-lead couplings, the zero-frequency cumulants exhibit a universal pattern (Euler polynomial), independent of the microscopic parameters. For a spinful QD, the Coulomb interaction effects are discussed for both strong interaction (single-electron occupancy regime) and weak interactions (perturbative regime). In the latter case, the interactions do not change the universal pattern at small voltage bias. Compared to the case without Majorana coupling, we show that, while the tunneling conductance might exhibit zero-bias anomaly due to Majorana or Kondo physics, the full counting statistics are qualitatively different in the presence of the Majorana coupling.

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