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**Title: Active Brownian Motion with Directional Reversals**

**Abstract:** Active Brownian motion with intermittent direction reversals are common in a class of bacteria like Myxo-coccus Xanthus and Pseudomonas putida. We show that, for such a motion in two dimensions, the presence of the two time scales set by the rotational diffusion constant  $D_R$  and the reversal rate  $\gamma$  give rise to four distinct dynamical regimes showing distinct behaviors. We analytically compute the position distribution which shows a crossover from a strongly non-diffusive and anisotropic behavior at short-times to a diffusive isotropic behavior via an intermediate regime. We find that the marginal distribution in the intermediate regime shows an exponential or Gaussian behavior depending on whether  $\gamma$  is larger or smaller than  $D_R$ . We also find the persistence exponents in the four regimes. In particular, we show that a novel persistence exponent  $\alpha = 1$  emerges due to the direction reversal.