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Robert Buckingham*, Department of Mathematical Sciences, The University of Cincinnati, P.O. Box 210025, Cincinnati, OH 45221. *Nonintersecting Brownian bridges on the unit circle with drift.*

Nonintersecting Brownian bridges on the unit circle form a determinantal stochastic process exhibiting random matrix statistics for large numbers of walkers. We investigate the effect of adding a drift term to walkers on the circle conditioned to start and end at the same position. We compute the asymptotic distribution of total winding numbers in the scaling regime in which the expected total winding is finite. Furthermore, we show that an appropriate double scaling of the drift and return time leads to a generalization of the tacnode process expressed in terms of generalized Hastings-McLeod functions. Our results follow from Riemann-Hilbert analysis of a family of discrete orthogonal polynomials with a complex weight. This is joint work with Karl Liechty. (Received September 24, 2017)