1099-60-21   **Andrey Sarantsev*** (`ansa1989@math.washington.edu`), Department of Mathematics, Box 354350, University of Washington, Seattle, WA 98195. *Infinite Systems of Competing Brownian Particles with Asymmetric Collisions.* Preliminary report.

Consider countably infinite (one-sided or two-sided) systems of Brownian particles on the real line. Each particle moves as a Brownian motion with drift and diffusion coefficients depending on its current rank. When two particles collide, they are pushed away from each other, and the push may be distributed not evenly between these two particles. Similar systems with finitely many particles were considered by Karatzas, Pal and Shkolnikov (2012). We prove existence and uniqueness theorems for such systems. We find product of exponentials stationary distributions for gaps between adjacent particles. For example, the well-known fact that the Poisson point process with constant intensity on the real line is invariant when points move as independent Brownian motions turns out to be also true for some analogous systems with asymmetric collisions. (Received November 23, 2013)