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**Leonid Petrov\*** ([lenia.petrov@gmail.com](mailto:lenia.petrov@gmail.com)), Department of Mathematics, University of Virginia, 141 Cabell Drive, Kerchof Hall, Charlottesville, VA 22904. *Mapping TASEP back in time.*

We obtain a new relation between the distributions  $\mu_t$  at different times  $t \geq 0$  of the continuous-time TASEP (Totally Asymmetric Simple Exclusion Process) started from the step initial configuration. Namely, we present a continuous-time Markov process with local interactions and particle-dependent rates which maps the TASEP distributions  $\mu_t$  backwards in time. Under the backwards process, particles jump to the left, and the dynamics can be viewed as a version of the discrete-space Hammersley process. Combined with the forward TASEP evolution, this leads to a stationary Markov dynamics preserving  $\mu_t$  which in turn brings new identities for expectations with respect to  $\mu_t$ . Based on a joint work with Axel Saenz. (Received July 21, 2019)