Christopher Janjigian* (janjigia@math.utah.edu), 155 SOUTH 1400 EAST, JWB 233, Salt Lake Cty, UT 84112-0090, and Firas Rassoul-Agha and Timo Seppäläinen. The Busemann process and geometry of geodesics in directed last passage percolation. Preliminary report.

We consider the geometric structure of the collection of all semi-infinite geodesics in last passage percolation on the square lattice, both for general weights and in the solvable setting. Coalescence properties of geodesics are shown to be equivalent to analytic properties of the Busemann functions viewed as a stochastic process in the direction parameter. As an application, we give a complete description of all semi-infinite geodesics in the solvable exponential model and discuss some interesting geometric consequences.

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