1145-62-706   **Giulio Trigila*** (`giulio.trigila@baruch.cuny.edu`). *The data-driven Schrödinger bridge.*
Erwin Schrödinger posed, and to a large extent solved in 1931/32 the problem of finding the most likely random evolution between two continuous probability distributions. This talk considers this problem in the case when only samples of the two distributions are available. A novel iterative procedure is proposed, inspired by Fortet-Sinkhorn type algorithms. Since only samples of the marginals are available, the new approach features constrained maximum likelihood estimation in place of the nonlinear boundary couplings, and importance sampling to propagate the functions φ and $\hat{\varphi}$ solving the Schrödinger system. This method is well-suited to high-dimensional settings, where introducing grids leads to numerically unfeasible or unreliable methods. (Received September 13, 2018)