

Entropic Optimal Transport Problem with Convex Functional Cost**Wang Xiaozheng**

We study an entropic optimal transport problem with an additional nonlinear convex penalty on the coupling. We prove existence, uniqueness, and uniform a priori bounds for the minimizer, which satisfies a fixed-point first-order optimality system via an exponentially tilted reference measure. Leveraging this variational structure, we propose a Sinkhorn–Frank–Wolfe flow, establish global well-posedness, and derive an energy–dissipation inequality implying exponential convergence to the unique optimum. We apply the resulting SFW algorithm to UAV routing with congestion aversion. Joint work with Anna Kazeykina, Zhenjie Ren, and Yufei Zhang.