Nonconvex optimization and jamming[1] YOAV KALLUS, Santa Fe
Institute — Recent work on the jamming transition of particles with short-range
interactions has drawn connections with models based on minimization problems
with linear inequality constraints and a concave objective. These properties reduce
the continuous optimization problem to a discrete search among the corners of the
feasible polytope. I will discuss results from simulations of models with and without
quenched disorder, exhibiting critical power laws, scaling collapse, and protocol
dependence. These models are also well-suited for study using tools of algebraic
topology, which I will discuss briefly.

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