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Optimization and Equilibrium Seminar

***Speaker**: Emilio Vilches (Universidad de O'Higgins)*

***Title**: Convergence Rates for Stochastic Proximal and Projection Estimators*

***Abstract**:*

In this talk, we discuss explicit convergence rates for the stochastic smooth ap-proximations of infimal convolutions introduced and developed in [2, 3]. In particular,we quantify the convergence of the associated barycentric estimators toward prox-imal mappings and metric projections. We prove a dimension-explicit √δ bound, with explicit constants for the proximal mapping, in the ρ-weakly convex (possibly nonsmooth) setting, and we also obtain a dimension-explicit √δ rate for the metric projection onto an arbitrary convex set with nonempty interior. Under additional regularity, namely C2 smoothness with globally Lipschitz Hessian, we derive an improved linear O(δ) rate with explicit constants, and we obtain refined projection estimates for convex sets with local C2,1 boundary. Examples demonstrate that these rates are optimal.

Miércoles 08 de Abril 2026, a las 16:15 hrs.

Sala de Seminarios John Von Neumann del Centro de Modelamiento Matemático (Beauchef 851, Edificio Norte, Piso 7).