

Convergence in Distributional Regression in Wasserstein distance and L2-norm

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Distributional regression is widely used in many applied fields. In meteorological forecasting, many statistical postprocessing techniques are within this framework and use scoring rules to assess the performance of the forecasts. The Continuous Ranked Probability Score (CRPS) is a widely used scoring rule and has interesting theoretical properties. We study the optimal minimax rate of convergence for a given class of distributions in term of theoretical risk associated to the CRPS. In order to study the universal consistency for the distributional regression framework, we take a step back from scoring rules and we adapt Stone's theorem to Wasserstein distances. This allows us to obtain results for multivariate distributions.

Orateur: PIC, Romain