
Distribution Function Estimation by Wasserstein Metric and Bernstein Approximation for C^{-1} Functions

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The aim of the paper is to estimate the density functions or distribution functions measured by Wasserstein metric, one kind of the statistical distance, which is usually required in the statistical learning. Based on the classical Bernstein approximation, a scheme is presented. To get the error estimates of the scheme, the problem turns to estimating the L_1 norm of the Bernstein approximation for monotone C^{-1} functions, which was rarely discussed in the classical approximation theory. Finally, we get a probability estimate by the statistical distance.

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