

# **Convergence of Nonparametric Functional Regression Estimates with Functional Responses**

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We consider nonparametric functional regression when both predictors and responses are functions. More specifically, we are given  $n$  copies of functional predictors and functional responses, not necessarily independent. Based on a recently introduced notion of weak dependence for functional data, we showed the almost sure convergence rates of both the Nadaraya-Watson estimator and the nearest neighbor estimator, in a unified manner. Several factors, including functional nature of the responses, the assumptions on the functional variables using the Orlicz norm and the desired generality on weakly dependent data, make the theoretical investigations more challenging and interesting.

**Key Words:** Bernstein's inequality, Nadaraya-Watson estimate, Nearest neighbor estimate, Orlicz norm.