CONDITIONAL EXPECTATIONS AND MARTINGALES FOR BARYCENTRIC MAPS ON METRIC SPACES

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Abstract

We study a theory of conditional expectations for random variables with values in a complete metric space M equipped with a contractive barycentric map β. Motivated by Sturm's work in 2002 on nonlinear martingale theory, we give convergence theorems for martingales of β-conditional expectations. The large derivation property of β-values of i.i.d. empirical measures is also given by applying the Sanov large deviation principle. This is joint work with Yongdo Lim.

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