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Title: Density on density regression by spline mixtures

Abstract: We propose a regression analysis when both dependent and independent variables are density functions.

Estimating a density by B-spline mixtures, we introduce basic linear operations and inner product to make density functions be a linear space.

Here some theoretical justifications for spline mixtures are discussed.

Collecting crime data in Tokyo together with human mobility by NTT DoCoMo, we apply density on density regression to them as empirical demonstrations.