Title: **Adaptive Importance Sampling by Mixtures of Products of Beta Distributions**

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Abstract:

The problem of numerically integrating spiky functions over high dimensional domains arises in computational statistics, particle physics, computer graphics and computational finance. We propose a Monte Carlo method based on adaptive importance sampling. Adaptive importance sampling methods alternate between importance sampling from a density constructed to suit the integrand, and updating the sampling density with the newly sampled data. We present a method in which the sampling density is a mixture of products of beta distributions.