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**CHICAGO**

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Adaptive Importance Sampling Techniques

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Ryerson 251, 5734 S. University Avenue

#### ABSTRACT

We will present some mathematical results on adaptive techniques to sample multimodal distributions which have been introduced in computational statistical physics. The analysis of convergence and efficiency of these techniques rely on various tools: functional inequalities for PDEs, martingale convergence results applied to stochastic approximation algorithms, etc. We will also discuss applications to problems in statistics.