



INSTITUTE OF MATHEMATICS
College of Science
UNIVERSITY OF THE PHILIPPINES
Diliman 1101, Quezon City



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**Estimating the Price of an Option via the
Quantization of the Marginal Measures of the
Underlying Asset**

Daryl Allen Saddi

Abstract

One of the fundamental problems in mathematical finance is the pricing of derivative assets such as options. In particular, exotic options are the type of options whose value depends on the price evolution of the underlying risky asset. In practice, pricing such option requires a model and numerical simulations. In this talk, we shall consider an underlying asset with no *a priori* model but with known distributions at two different times. We then apply a quantization technique on the said distributions and then come up with the set of martingale measures between the quantized marginals. Finally, we apply use the Monge-Kantorovich optimal transportation theory and come up with the estimated price for certain pay-off functions.

Keywords: martingale measure, U_n -quantization, uniform marginals, bistochastic matrices.