

CONSISTENCY OF PROBABILITY MEASURE QUANTIZATION BY MEANS OF POWER
REPULSION-ATTRACTION POTENTIALS

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In this talk we are concerned with the study of the consistency of a variational method for probability measure quantization, deterministically realized by means of a minimizing principle, balancing power repulsion and attraction potentials. The proof of consistency is based on the construction of a target energy functional whose unique minimizer is actually the given probability measure to be quantized. Then we show that the discrete functionals, defining the discrete quantizers as their minimizers, actually Gamma-converge to the target energy with respect to the narrow topology on the space of probability measures. A key ingredient is the reformulation of the target functional by means of a Fourier representation, which extends the characterization of conditionally positive semi-definite functions from points in generic position to probability measures.

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