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Title: Optimal Quantization

Abstract: If we assign to each point from a given Jordan measurable set in Euclidean space the nearest point from a fixed finite set we make an 'error'. The lecture deals with the questions, how should the finite set be chosen in order to minimize the 'error' and what is the value of the 'minimum error'. The results obtained then are applied to the following problems: (i) Minimum distortion in data transmission.

- (ii) Approximation of probability measures by discrete measures.
- (iii) Minimum error of numerical integration formulae.
- (iv) Approximation of convex bodies by polytopes.
- (v) The isoperimetric problem in Minkowski spaces.