

COLLOQUIUM

Optimal partitions of measures

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Abstract: Let X be a probability measure space and ψ_1, \dots, ψ_N measurable, real valued functions on X . Consider all possible partitions of X into N disjoint subdomains X_i on which $\int_{X_i} \psi_i$ are prescribed. I'll address the question of characterizing the set $(m_1, \dots, m_N) \in \mathbb{R}^N$ for which there exists a partition X_1, \dots, X_N of X satisfying $\int_{X_i} \psi_i = m_i$ and discuss some optimization problems on this set of partitions. The relation of this problem to semi-discrete version of optimal mass transportation is discussed, as well as applications to game theory.

Thursday, September 27, 2012, 4:00 pm
Mathematics and Science Center: W301

MATHEMATICS AND COMPUTER SCIENCE
EMORY UNIVERSITY