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## 099 - JULIAN LISA

*An Introduction to Polynomial and Semi-Algebraic Optimization*

CONSTRAINED POLYNOMIAL OPTIMIZATION PROBLEMS WITH

the optimization is restricted to probability distributions where the probability density function is 2000 Mathematics Subject Classification. 90C22 and 90C26 and 90C30. Key words and phrases. Polynomial optimization and bound-constrained optimization and Lasserre hierarchy. 1

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In mathematical optimization, constrained optimization (in some contexts called constraint optimization) is the process of optimizing an objective function with respect to some variables in the presence of constraints on those variables. The objective function is either a cost function or energy function, which is to be minimized, or a reward function or utility function, which is to be maximized. Constraints can be either

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problems with at most two variables per constraint. A Max 2-CSP (or for short, simply CSP) instance defines a "score function" or "soft constraint" on each vertex and edge of a "constraint graph", and its solution is a vertex coloring or "assignment" maximizing the total score. We define a more general class we call Polynomial 2-CSP, or simply 2-PCSP or

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