

**Meeting:** 1003, Atlanta, Georgia, SS 17A, AMS-SIAM Special Session on Nonsmooth Analysis in Variational and Imaging Problems, I

1003-49-627      **Jonathan M Borwein\*** ([jborwein@cs.dal.ca](mailto:jborwein@cs.dal.ca)), Faculty of Computer Science, 6050 University Avenue, Dalhousie University, Halifax, NS B3H 3W5, Canada. *Maximum Entropy Methods and (Non-)Convex Optimization.*

I shall discuss in “tutorial mode” the formalization of inverse problems such as signal recovery and option pricing as (convex and non-convex) optimization problems over the infinite dimensional space of signals. I shall touch on the following: 1. The impact of the choice of “entropy” (e.g., Boltzmann-Shannon, Burg entropy, Fisher information) on the well-posedness of the problem and the form of the solution. 2. Convex programming duality: what it is and what it buys you. 3. Algorithmic consequences. 4. Non-convex extensions: life is hard.

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