① An algorithm for total variation minimization: applications to image denoising and image decomposition problems

② Total variation minimization and binary energies: algorithms and applications to segmentation and interface evolution problems

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ABSTRACT

In the first talk, I will describe an algorithm for total variation minimization based on a dual formulation of the problem, and then show how it can be used for solving a celebrated image decomposition problem suggested by Y. Meyer a few years ago. In the second talk, I will relate the minimization of total variation to the minimization of binary problems (involving the perimeter). In the discrete setting most of this was well known to the combinatorial optimization community. I will discuss applications to curve/interface evolution problems (mean curvature motion), image processing (binary segmentation, snakes) and other problems with moving interfaces. Collaborators on these subjects include J.F. Aujol, G. Bellettini, V. Caselles, M. Novaga, J. Darbon.