Variational versus PDE-based Approaches in Mathematical Image Processing

PRESENTED BY:

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In mathematical image processing we are often presented with amazing examples of image enhancement algorithms. Yet, when applied to different noisy images, they can produce unwanted effects. The analysis of such algorithms lags behind their intuitive development. Two essentially different models have found wide recognition: a variational approach according to Mumford and Shah and an approach via nonlinear diffusion equations. One of these equations is nonparabolic and was suggested by Perona and Malik. In my talk I will point out a connection between these two seemingly unrelated approaches and explain some connections with total variation flow.