IP/DIFFERENTIAL GEOMETRY/PDE SEMINAR

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LOW 115
4–5PM

Wavelet Frame Based Numerical Methods: Connections and Applications

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Over the past several decades, a wide variety of computational techniques have been developed to solve the ill-posed linear inverse problems of imaging and image processing. Major examples include variational methods such as Tikhonov and TV, PDE approaches such as Perona-Malik and nonlinear diffusion, and sparsity based methods such as compressive sensing and wavelet shrinkage. Recent work has shown that a particular sparsity based approach, the wavelet frame method, is connected to both the variational approach and the PDE approach. This provides a new way to interpret wavelet methods and discretize PDE and variational methods. We will discuss these connections as well as some applications to low-dose cone beam CT.

For more information about this seminar, visit the DG/PDE Seminar Web page (from the Math Department home page, `www.math.washington.edu`, follow the link **Seminars, Colloquia, and Conferences**).