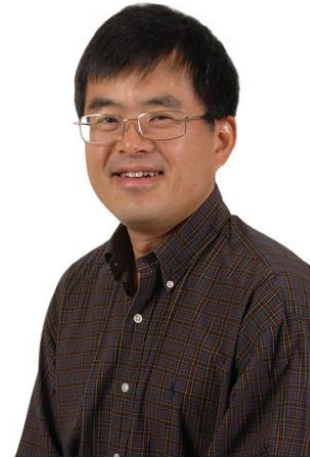


Minimizing the Difference of L1 and L2 Norms and Applications

ABSTRACT – L1 norm minimization is the widely used convex method for enforcing sparsity in signal recovery and model selection. In this talk, we introduce a non-convex Lipschitz continuous function, the difference of L1 and L2 norms (DL12), and discuss its sparsity promoting properties. Using examples in compressed sensing and imaging, we show that there can be plenty of gain beyond L1 by minimizing DL12 at a moderate level of additional computation via the difference of convex function algorithms. We draw connection of DL12 with penalty functions in statistics and machine learning, and remark on future research.



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SPEAKER BIO – Jack Xin has been Professor of Mathematics at UC Irvine since 2005. He received his Ph.D in applied mathematics at Courant Institute, New York University in 1990. He was a postdoctoral fellow at Berkeley and Princeton in 1991 and 1992. He was assistant and associate professor of mathematics at the University of Arizona from 1991 to 1999. He was professor of mathematics from 1999 to 2005 at the University of Texas at Austin.

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