

Industrial and Systems Engineering Seminar

Quadratic Programs with On-Off Constraints

Wednesday, October 30

3:15 PM – Refreshments before the Seminar

3:30 PM – Graduate Seminar

Mechanical Engineering Room 4125 A & B



Professor Jeff Linderoth

Professor

Departments of Industrial and Systems Engineering,
Computer Science

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We study optimization problems that have both nonlinear functional relationships between decision variables and 0-1 indicator variables that turn on and off these relationships. Problems of this class occur in many areas, including statistics, financial engineering, and engineering design. After reviewing earlier work on a reformulation technique applicable to the case when the nonlinear functions are separable, we discuss on-going research aimed at attacking the non-separable case. Our primary focus will be on the case when the nonlinearities are quadratic.

Joint work with Hongbo Dong.

Bio: Jeff Linderoth is a Professor in the departments of Industrial and Systems Engineering and Computer Science (by courtesy) at the University of Wisconsin – Madison, joining both departments in 2007. Dr. Linderoth received his Ph.D. degree from the Georgia Institute of Technology in 1998. From 1998 – 2000, he was employed with the Mathematics and Computer Science Division at Argonne National Laboratory, and from 2000 – 2002, he was a Senior Consultant with the Optimization-based financial products firm of Axioma Inc. Prior to joining University of Wisconsin – Madison from 2002 – 2007, he was a Assistant Professor at Lehigh University, where he co-founded COR@L (the Center for Optimization Research @ Lehigh). In 1999, Dr. Linderoth was named Enrico Fermi Scholar at Argonne National Lab. In 2002, Dr. Linderoth was a co-recipient of the SIAM/Activity Group on Optimization Prize, and in 2005 he was awarded an Early Career Development Award from the Department of Energy and an IBM Faculty Partnership award. Dr. Linderoth currently serves on the editorial boards of 4 journals.