The Electrical and Computer Engineering Program presents
ECEN Seminar Series

One-Dimensional Phase Retrieval Problem- Review and Recent Developments

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The phase retrieval problem resumes to the reconstruction of a signal given the modulus of its Fourier transform. This problem arises in applications in which the phase is apparently lost or is impractical to measure and only intensity data are available. The phase retrieval problem is related to various applications including antenna design, filter design, image reconstruction, electronic microscopy, and the characterization of astronomical objects. In this talk, we will first review the one- and multi-dimensional phase retrieval problem and the approaches proposed to solve them. Then we will focus on more recent developments concerning the existence of the solution of phase retrieval problem for a given input magnitude data. In case there is no solution from these data, we are looking to solve the problem by oversampling the Fourier measurements.

Corneliu Rusu graduated in electronics and telecommunications in 1985 from Technical University of Cluj-Napoca (Romania) and in mathematics in 1990 from Babes-Bolyai University of Cluj-Napoca. He received his PhD degree in electronics in 1996 from Technical University of Cluj-Napoca and his Doctorate degree (with honors) in signal and image processing from Tampere University of Technology in 2000. In 1991 he joined the Department of Electronics and Telecommunications, Technical University of Cluj-Napoca, where he is now a professor. His research interests include signal reconstruction, adaptive filters, computer-aided analysis and synthesis of circuits, and image and optical information processing. He has published over 160 papers in journals and conferences.

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