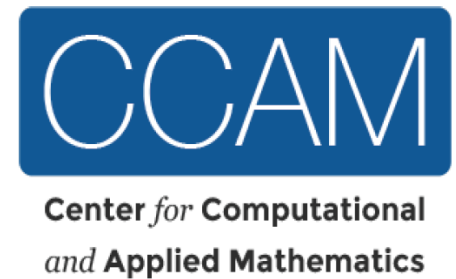




Thursday May 11, 2017
4PM-6PM
MH-491



Title: A Tutorial Introduction to Tomographic Image Reconstruction from Projections

Professor Elias Salomão Helou Neto (Time= 3-4PM)

Instituto De Ciências Matemáticas E De Computação, Universidade De São Paulo, Brazil

Abstract: This talk introduces the problem of transmission tomographic imaging and the two main groups of mathematical reconstruction techniques aimed at solving it. We develop analytical and iterative methods assuming only undergraduate knowledge of multivariate calculus, linear algebra and Fourier analysis.

Title: Speeding up iterative methods for tomographic image reconstruction

Professor Elias Salomão Helou Neto (Time= 4-5PM)

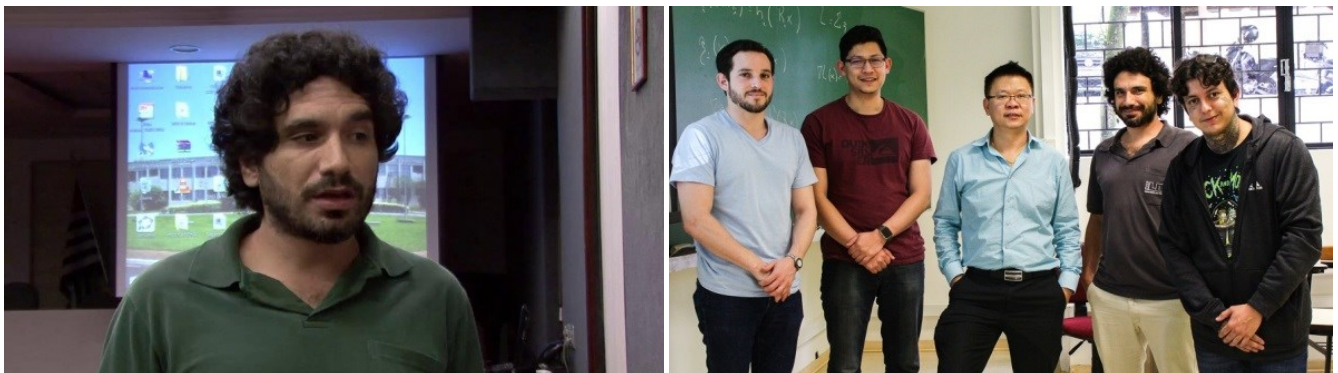
Instituto De Ciências Matemáticas E De Computação, Universidade De São Paulo, Brazil

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Jacob Cupul, Luis Ramirez, and Matthew Salkin

Department of Mathematics, California State University Fullerton, USA

Abstract: Tomographic image reconstruction is a computationally intensive task. When data sampling conditions are less than ideal, iterative methods are useful but impose a greater computational burden. In order to reduce the iterative reconstruction time, at last three approaches have been tried in the literature: (i) faster algorithms, (ii) less expensive iterations, and (iii) massively parallel computations. Ideally, a reconstruction method should take advantage of all three strategies simultaneously, but, to our knowledge, there is no implementation of fast iterative algorithms using cheap iterations running on massively parallel hardware. We will discuss aspects of the three strategies and the difficulties found when trying to combine all or some of them.



Light Refreshment will be served.

For information regarding seminars and workshops email: ccam@fullerton.edu