



Institute for Pure and Applied Mathematics
University of California, Los Angeles presents

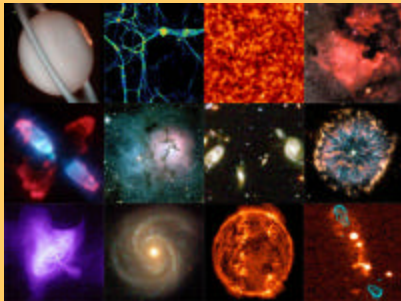
Multiscale Geometry and Analysis in High Dimensions

Workshop IV: Multiscale Geometric Methods in Astronomical Data Analysis

November 8-12, 2004

Members of the Organizing Committee include **Vicent Martinez** (University of Valencia) (co-Chair) and **Jean-Luc Starck** (CEA) (co-Chair), **Peter Coles** (University of Nottingham), **David Donoho** (Stanford University) and **Olivier Forni** (Universite Paris-Sud, France)

Workshop IV: Multiscale Geometric Methods in Astronomical Data Analysis is part of an active program of research activities, seminars and workshops throughout the **September 7 - December 17, 2004** period and core participants will be in residence at IPAM continuously for these thirteen weeks. The program will open with tutorials, and will be punctuated by 5 major workshops and a culminating workshop at UCLA's Lake Arrowhead Conference Center. Several distinguished senior researchers will be in residence for the entire period. Between the workshops there will be a program of activities involving the long-term and short-term participants, as well as visitors.



Scientific Overview:

With the recent advent of high quality large-scale catalogs of galaxies, we are in a position to test various hypotheses about galaxy formation and to compare the 'standard models' such as Λ -CDM, with observations. In this direction, new multiscale tools for N-point correlation functions, for N-body problems, and for new-wave feature detection (e.g. of filaments and sheets), offer exciting opportunities.

The goal of this workshop is to bring scientists from the astronomical community together with mathematicians to explore state-of-the-art methods and new challenges.

Topics to be covered include:

3D data analysis, clustering methods, Cosmic Microwave Background Imaging and Imaging with Photon-Limited Data

Semester Program Schedule:

Tutorials: September 8 – 11: September 13-15, 2004

Workshop 1: September 20 – 24: Multiscale Geometry in Image Processing and Coding

Workshop 2: October 19 – 23: Multiscale Geometry in Scientific Computing

Workshop 3: October 25 – 29: Multiscale Structures in the Analysis of High-Dimensional Data

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Workshop 5: November 15 – 19: Mathematical Analysis and Multiscale Geometric Analysis

Participation:

Financial support for this workshop is available for participants at all academic levels, and recent PhD's, graduate students, and researchers in the early stages of their career are especially encouraged to apply. An online application for support is available at <http://www.ipam.ucla.edu/programs/mgaws4>. Encouraging the careers of women and minority mathematicians and scientists is an important component of IPAM's mission and we welcome their applications. Applicants who are interested in becoming core participants and participating in the semester program (September 7 - December 17, 2004) should apply at <http://www.ipam.ucla.edu/programs/mga2004>.

Please visit our website at

<http://www.ipam.ucla.edu/programs/mgaws4>

or email questions to mgaws4@ipam.ucla.edu

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