

presentación inaugural **imdea matemáticas**

27 de septiembre 2007

Universidad Autónoma de Madrid
Facultad de Ciencias. Módulo C-0. Salón de Actos
Ciudad Universitaria de Cantoblanco
Cómo llegar: www.imdea.org

10:30 Apertura de la Jornada Inaugural

Ilma. Sra. D^a. Alicia DELIBES

Viceconsejera de Educación de la Comunidad de Madrid (CM)
Patronato de IMDEA Matemáticas

10:50 A Global Scenario for Chaotic Systems from Poincaré to Present Time



Prof. Jacob PALIS

Professor of the Instituto Nacional de Matemática Pura e Aplicada (IMPA)
President of the Academy of Sciences for the Developing World (TWAS)
President of the Brazilian Academy of Sciences
Patronato de IMDEA Matemáticas

Chaotic systems have been much focused in several branches of Science in recent time: in many natural phenomena that evolve in time, one detects some uncertainty in their long range behavior.

The 1963 discovery by Lorenz of uncertainty in simple nonlinear models for weather prediction, created, in subsequent years, a great excitement. Back to the second half of the 19th century, a new way of looking at dynamical systems, became available; actually, the great French mathematician Henri Poincaré suggested a global vision of them: we should be able to describe the long-range behavior of trajectories "pour la plupart des systèmes".

From there on, a string of remarkable contributions led to its sharp development, which I shall discuss in this lecture.

11:50 Intermedio

12:20 Contributions of Applied Mathematics to the Numerical Simulation of Aerospace Problems: Past, Present and Future



Prof. Juan José ALONSO

Director of the Fundamental Aeronautics Program Office,
National Aeronautics and Space Administration (NASA)
Professor of the Stanford University
Comité Científico de IMDEA Matemáticas

This talk will highlight a number of key enabling advances in applied mathematics that have led to, and will continue to lead to revolutionary improvements in our ability to solve aerospace engineering problems.

I will begin by reviewing the state of the art in the numerical simulation of aerospace problems with particular emphasis on the computation of fluid flow. After discussing the capabilities that existed in the early 1970s, I will highlight the top contributions from the field of applied mathematics that have played a role in making today's calculations possible. Furthermore, I will discuss current and possible future contributions that will make a difference in our ability to develop the simulation software of the future.

Examples will be drawn from the fields of external and internal aero-thermodynamics (including vehicle configuration, propulsion systems, acoustics, and re-entry vehicles), structural analysis, and material science.

13:20 IMDEA-Mathematics: A new opportunity for excellence and interdisciplinary research in Mathematics

Prof. Enrique ZUAZUA

Catedrático de Matemática Aplicada de la UAM
Director de IMDEA Matemáticas

Acto de clausura