Sistemas dinámicos y geometría: tres aproximaciones
Periodo de concentración 2009-2010

Robert Ghrist
Universidad de Pennsylvania (EE.UU.)

"Braids, Topology and Dynamics"

The course will cover the following topics:

- **Braids and knots theory in dynamics**
- **Braids, automorphisms of discs, and mapping class groups**
- **Neilsen-thurston classification theory**
- **Algorithmic issues; entropy, etc.**
- **Dynamics on configuration spaces**
- **Braids and mixing in fluids**
- **Braids and sensors in robotics**
- **Braids and lagrangian dynamics**
- **Braids and hamiltonian dynamics**
- **Floer theory for braids**

Brief resume of Robert Ghrist's professional biography:

Robert Ghrist is the Andrea Mitchell University Professor of Mathematics and Electrical/Systems Engineering at the University of Pennsylvania. After earning degrees in Mechanical Engineering from the University of Toledo and in Applied Mathematics from Cornell University, he held academic positions in the Mathematics Department at the University of Texas, Austin; Georgia Tech; and the University of Illinois, Urbana. Professor Ghrist's work focuses on applying methods from topology and geometry to problems in engineering systems. These include applying homology to sensor networks, sheaf theory to data aggregation, geometric group theory to robotics, contact topology to fluid dynamics, and knot theory to differential equations. Professor Ghrist received an NSF PECASE (Presidential Early Career Award in Science and Engineering) from President G. W. Bush in 2004. Prof. Ghrist was named by Scientific American magazine a "SciAm Top 50" for research innovation in 2007.

Fechas: del 3 al 7 de mayo de 2010.
Primera sesión lunes 3 a las 12.00 hr.
Seminario 225, Facultad de Ciencias Matemáticas, UCM