

Intensive Research Period
May – July 2011



KNOTS & APPLICATIONS

Workshop
Topological Dynamics in Physics and Biology
12-13 July, 2011

Mathematical Research Centre (CRM) “Ennio De Giorgi”
Scuola Normale Superiore – Pisa, Italy

URL: <http://www.crm.sns.it/hpp/events/event.html?id=146>

The use of geometric and topological methods to study dynamical and energetic aspects of physical and biological systems has proven to be very useful to uncover and understand new or fundamental mechanisms in nature. Geometric information associated with the continuous deformation, bending and twisting of material surfaces, topological characteristics of such surfaces and their relation with the topology of the boundary as well as the topological transition associated with a sudden rearrangement of the system provide new ways to analyze energy relaxation and transfer in a broad variety of physical, chemical and biological systems.

With this workshop we shall present and discuss some of the most recent advancements in topological dynamics, from nematic systems in material science to optical vortices, from polymer tangles to soap film transitions in fluid mechanics.

Invited Speakers

Mark Dennis, Bristol U., UK
Anton Desyatnikov, Australian Natnl. U., Australia
Bertrand Duplantier, CEA at Saclay, France
Xin Liu, U. Sydney, Australia
Michael Monastyrsky, ITEP Moscow, Fed. Rep. Russia
Enzo Orlandini, INFN Padova, Italy
Davide Proserpio, U. Milano, Italy
Rob Scharein, Hypnagogic Software, Canada
De Witt Sumners, Florida State U., USA

Participants willing to contribute with a talk are encouraged to submit title and abstract to Renzo Ricca at renzo.ricca@unimib.it. The local expenses of speakers will be covered by the organization. Young participants can apply for financial support, even if they are not submitting a talk.

Registration: Required via the website above.

Financial support: Prospective participants should seek grant/university support towards travel expenses. Limited funding towards participant local expenses may be provided by CRM and INdAM upon application. Participants seeking support should send their CV and list of publications to renzo.ricca@unimib.it, before **13 April, 2011**.