

Intensive Research Period
May – July 2011

KNOTS & APPLICATIONS

ESF-EMS-CRM-Pi International Conference on Knots and Links: From Form to Function

2-8 July 2011

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



In recent years there has been a growing interest in "applicable" aspects of classical knot theory in 3D, motivated by the discovery of new concepts and techniques with strong geometric flavor, both in pure and applied mathematics. Many of these new mathematical approaches have been stimulated by research interaction between mathematics, physics, chemistry and biology. This conference aims at bringing together world specialists in knot theory and applications by fostering a strong interaction between theoretical methods, numerical methods and applications in mathematical and theoretical physics, polymer physics and biology. Particular emphasis will be put on progress in geometric techniques and computational implementation of knot theoretical concepts to explore classification issues, energy/complexity relations, knot tightening and functional properties of physical knots.

The proposed conference will be an event of primary importance at the crossroad of geometric knot theory, mathematical and theoretical physics, polymer physics and biology. New impetus on geometric approach to knots in 3D from an analytical and numerical viewpoint is expected. Indeed, this conference provides a timely response to a call for more work on geometric aspects of knot theory and applications and is part of the 3-month intensive research period program on “Knots and Applications”, that takes place at the Centro di Ricerca Matematica “Ennio De Giorgi” of the Scuola Normale Superiore di Pisa, Italy.

Grants are available for researchers to cover the conference fee and possibly part of the travel costs. Priority will be given to students and early stage researchers.

Plenary Speakers will include:

Colin Adams, Williams College, Williamstown, US
Carlo Barenghi, Newcastle University, UK
Mitchell Berger, University of Exeter, UK
Dorothy Buck, Imperial College London, UK
Annalisa Calini, College of Charleston, US
Nafaa Chbili, UAEU, Abu Dhabi, AE
Isabel Darcy, University of Iowa, US
Tetsuo Deguchi, Ochanomizu University, Tokyo, JP
Bertand Duplantier, CEA Saclay, FR
Mark Dennis, University of Bristol, UK
Yuanan Diao, University of North Carolina Charlotte, US
Giovanni Dietler, EPFL, Lausanne, CH
Enore Guadagnini, University of Pisa, IT
Denis Ilyutko, Moscow State University, RU
Robert Kusner, University Pennsylvania, Philadelphia, US
Sofia Lambropoulou, National Technical University of Athens, GR

Joël Langer, Case Western Reserve University, Cleveland, US
Xin Liu, University of Sydney, AUT
Cristian Micheletti, SISSA, Trieste, IT
Kenneth Millett, University of California, Santa Barbara, US
Keith Moffatt, University of Cambridge, UK
Michael Monastyrsky, ITEP, Moscow, RU
Jun O’Hara, Tokyo Metropolitan University, JP
Carlo Petronio, University of Pisa, IT
Mario Rasetti, Politecnico di Torino, IT
Eric Rawdon, University of St Thomas, St Paul, US
Renzo Ricca, University of Milano-Bicocca, IT
Andrzej Stasiak, University of Lausanne, CH
Paweł Strzelecki, University of Warsaw, PL
John M. Sullivan, TU Berlin, DE
De Witt Sumners, Florida State University, US
Maria Carla Tesi, University of Bologna, IT

Application form & programme available from www.esf.org/conferences/11379
Closing date for applications: 26 April 2011

