UNIVERSITÀ DEGLI STUDI DI TORINO
Dipartimento di Matematica G. Peano

28 aprile 2014

una giornata

Curiosando nella Matematica

Browsing through Mathematics

This is a series of talks aimed at students in mathematics. They are meant to stimulate curiosity and interest in topics that are rarely mentioned in regular lectures. They range over diverse areas of mathematics and they require little to no background knowledge.

The talks will be given by staff of the Department of Mathematics and a few PhD students. None of the speakers are receiving any compensation, so we would like to express our gratitude to all of them.

The event has been organized by Vivina Barutello, Luigi Vezzoni, Domenico Zambella, Cristina Zucca. For further information contact the organizers.

	aula B	aula C	aula S	aula 5
9:30 – 9:50	**Opening.**			
10:00 – 10:50	**Susanna Terracini.** Orbits and space-time symmetries in the classical n-body problem Prerequisites: Standard calculus.	**Matteo Viale.** An introduction to cardinal arithmetic. Prerequisites: None.	**Paolo Cermelli.** Some mathematical models of complexity in life sciences. Prerequisites: Systems of ODE, stochastic processes, elmentary game theory.	**Matteo Semplice.** Endangered cultural heritage: math can help! Prerequisites: Basic numerical analysis.
11:00 – 11:50	**Laura Sacerdote.** Joint distributions and copulas. Ideas and applications. Prerequisites: A first course in probability (knowledge of joint distributions and their properties).	**Alberto Albano.** Knots and curvature: a theorem of John Milnor. Prerequisites: First and second year calculus.	**Clara Silvia Roero.** Mathematicians in Torino University from 18th to 20th century Prerequisites: None.	**Alessandro Andretta.** How do you prove that something is unprovable? Prerequisites: Frst order logic, formal derivation, Boolean algebras, ZFC set theory up to ordinals and cardinals.
12:00 – 12:30 PhD students	**Silvia Steila.** Finite and infinite Ramsey theorem. Prerequisites: None.	**Massimo Borsero.** Fourier transform: why should I care? Prerequisites: Standard calculus and basic knowledge of ODE.	**Andrea Villa.** Playing with origami. Prerequisites: Basic notions of algebra and analytical geometry.	**Filippo Cavallari.** Reverse mathematics. Prerequisites: The notion of theory in mathematical logic.

	aula Monod	aula C	aula S	aula Magna
14:00 – 14:50	**Anna Maria Fino.** Evolution of metrics on surfaces and manifolds. Prerequisites: Basic notions on differentiable surfaces.	**Ubertino Battisti.** Time-frequency analysis-applications to medical imaging, archeology, watermarking. Prerequisites: Standard calculus and basic knowledge of ODE.	**Angelica Pachon.** Probability and complex networks. Prerequisites: A first course in probability.	**Andrea Mori.** p-adic numbers: what they are and what they are good for. Prerequisites: A preliminary knowledge of the concept of metric space and of the very basic notions of topology may be of some help.
15:00 – 15:50	**Ezio Venturino.** Modeling trees debarking by wild animals in natural environments. Prerequisites: A reasonable familiarity with the basics of ODE.	**Ferdinando Arzarello.** From the Heron formula to elliptic curves. Prerequisites: The notion of group.	**Federica Galluzzi.** Mathematics of data: algebraic and topological methods. Prerequisites: The notion of group, homomorfism and quotient space.	**Marcella Palese.** From local to global in the calculus of variations. Prerequisites: Basics of classical calculus of variations, fibered manifolds, differential forms, cohomology.
16:00 –		**Drinks, nibbles and closing remarks.**		

Find the abstracts of the talks in
http;//wwww.personalweb.unito.it/domenico.zambella/curiosando2014