

The Computer Science Program of CSU Channel Islands presents:

Computational Algorithms for Dynamical Systems

a talk by

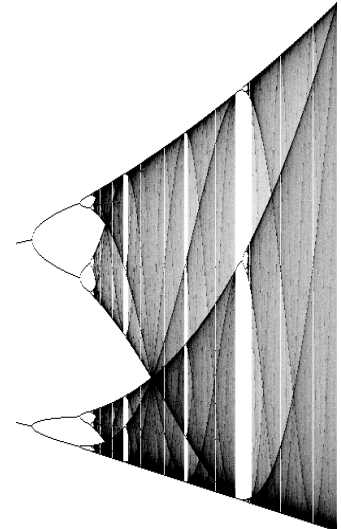
Stefano Luzzatto

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Abdus Salam International Centre for Theoretical Physics (ICTP) in Trieste, Italy

Tuesday, January 24, 2017, 6:00–7:00pm in SIE 1422

Abstract: Dynamical Systems are mathematical models of systems which evolve in time according to certain natural laws. This can include almost anything, from planetary motion to flipping a coin, and from the growth of populations to weather patterns. A very sophisticated mathematical theory of Dynamical Systems now exists and helps explain, for example, why systems such as the motions of planets are very regular and predictable whereas others such as flipping a coin or the weather are “chaotic” and highly unpredictable. In this talk I will give a brief and elementary introduction to some of the main concepts of the theory and describe some joint projects with Pawel Pilarczyk where the methods and ideas from computer science, in particular algorithms pertaining to the properties of graphs, can be applied to obtain rigorous, explicit, quantitative, and thus more applicable, results on chaotic dynamical systems.



Bio: Stefano Luzzatto obtained his PhD in Dynamical Systems at the International School for Advanced Studies (SISSA) in Trieste, Italy and the Instituto de Matematica Pura e Aplicada (IMPA) in Rio de Janeiro, Brazil. He was a postdoctoral researcher at the University of Warwick, UK and then a lecturer at Imperial College London, and since 2009 has been at the Abdus Salam International Centre for Theoretical Physics (ICTP) in Trieste, Italy. Part of the mission of ICTP is to foster research in developing countries and therefore part of his current job involves interaction with enthusiastic researchers from all over the world as well as specific projects and trips to countries such as Benin, Senegal, Nepal, Uzbekistan..., a part of the job he does not usually complain about. He is increasingly interested in the role of computer assisted computations in dynamical systems and how this can bridge the gap between the abstractness of mathematics and the concreteness of real life.

Contact: Pawel Pilarczyk