LxDS Spring School 2024

by **Telmo Peixe*,****

The LxDS Spring School 2024, organized by the LxDS-Lisbon Dynamical Systems Group in collaboration with CEMAPRE and CMAF-CIO, took place from May 27 to 29, 2024. The event was held at the Faculdade de Ciências, Universidade de Lisboa (FCUL). This spring school focused on various topics of dynamical systems, providing an opportunity for participants to enhance their knowledge through courses delivered by internationally recognized experts.

The school featured three comprehensive courses on dynamical systems, presented by distinguished scholars:

Arnold Diffusion through Geometric Methods

Professor Tere M-Seara
Universitat Politècnica de Catalunya

This course delved into the geometric methods used to study Arnold diffusion, a phenomenon in Hamiltonian systems where trajectories exhibit slow drift over long periods.

* On behalf of the organizing committee.
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Nonautonomous Dynamical Systems: Theory and Applications

Professor Peter Ashwin
University of Exeter

Professor Ashwin's course covered the theoretical foundations and practical applications of nonautonomous dynamical systems, which involve time-dependent changes in the system's parameters.

Topological and Ergodic Properties of Hyperbolic Flows

Professor Paulo Varandas
Universidade Federal da Bahia and CMUP

This course explored the topological and ergodic characteristics of hyperbolic flows, providing insights into their behavior and properties.

The event attracted around 20 participants, including speakers, organizers, PhD students from the Universidade do Porto and Universidade de Aveiro, master's students in mathematics from FCUL, and researchers with an interest in dynamical systems.

In addition to the courses, the school featured a session for oral presentations, where participants had the chance to present their latest research. Notable presentations included:

Qualitative Analysis of Prey Predator Model

Muhammad Ajaz
CMUP

Ajaz presented the complex dynamics of two-dimensional discrete-time predator-prey models, focusing on a modified Leslie–Gower model with prey harvesting.

A Dynamical Journey Around Double Standard Maps

Ana Rodrigues
Universidade de Évora

Rodrigues presented the results obtained so far for the investigation of the family of double standard maps

$$f_{a,b}(x) = 2x + a + \frac{b}{\pi}\sin(2\pi x) \pmod 1.$$

from topological results to ergodic theory.

Thanks to the financial support from CIM (Centro Internacional de Matemática), the school was able to cover the travel, lodging, and meal expenses for the participating PhD students. This support was crucial in facilitating their attendance and participation in the event.

The LxDS Spring School 2024 was a successful event that provided valuable learning and networking opportunities for all attendees. The collaboration between LxDS-Lisbon Dynamical Systems Group, CEMAPRE, and CMAF-CIO, along with the support from CIM, ensured a productive and enriching experience for everyone involved. The courses and presentations highlighted some of the latest advancements in dynamical systems, contributing to the growth and development of this field.

More information about the event can be found at https://sites.google.com/view/lxds-ss-2024/

The organizing committee:

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