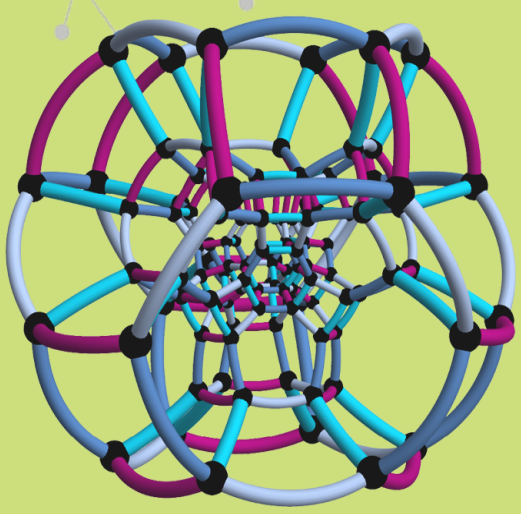
הפקולטה למתמטיקה

הטכניון
מכון טכנולוגי לישראל



הפקולטה למתמטיקה מזמינה

אתכם להרצאה במסגרת

המועדון המתמטי

מתי ואיפה

Wednesday 21.1.26
13:30, Amado 232

נושא

The Mathematics of Multi-Agent Coordination and Control

מרצה

Daniel Zelazo

תקציר

Many modern systems consist of large numbers of interacting agents whose behavior is not governed by a single decision-maker, but instead emerges from local interactions. Examples range from networks of autonomous vehicles and robotic teams to distributed sensing systems and social networks. Understanding how simple interaction rules give rise to coordinated behavior is a central challenge that naturally leads to rich mathematical questions. In this talk, I will present an overview of the mathematics behind **multi-agent coordination and control**. I will begin with a brief introduction to control theory as the study of dynamical systems with feedback, grounded in differential equations. I will then focus on coordination problems in networks of agents, emphasizing **consensus** and **formation control** as two representative examples. The discussion will highlight how tools from **linear algebra**, **graph theory**, and **ordinary differential equations** provide insight into stability, convergence, and robustness of collective behavior. The goal is to show how mathematically simple models can capture essential features of coordination in large-scale systems, and to illustrate why multi-agent control has become a fertile meeting point for dynamical systems, networks, and linear systems theory.

- **The talk will be in English.**
- **Note the unusual hour.**

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