

Advanced course of Mathematics

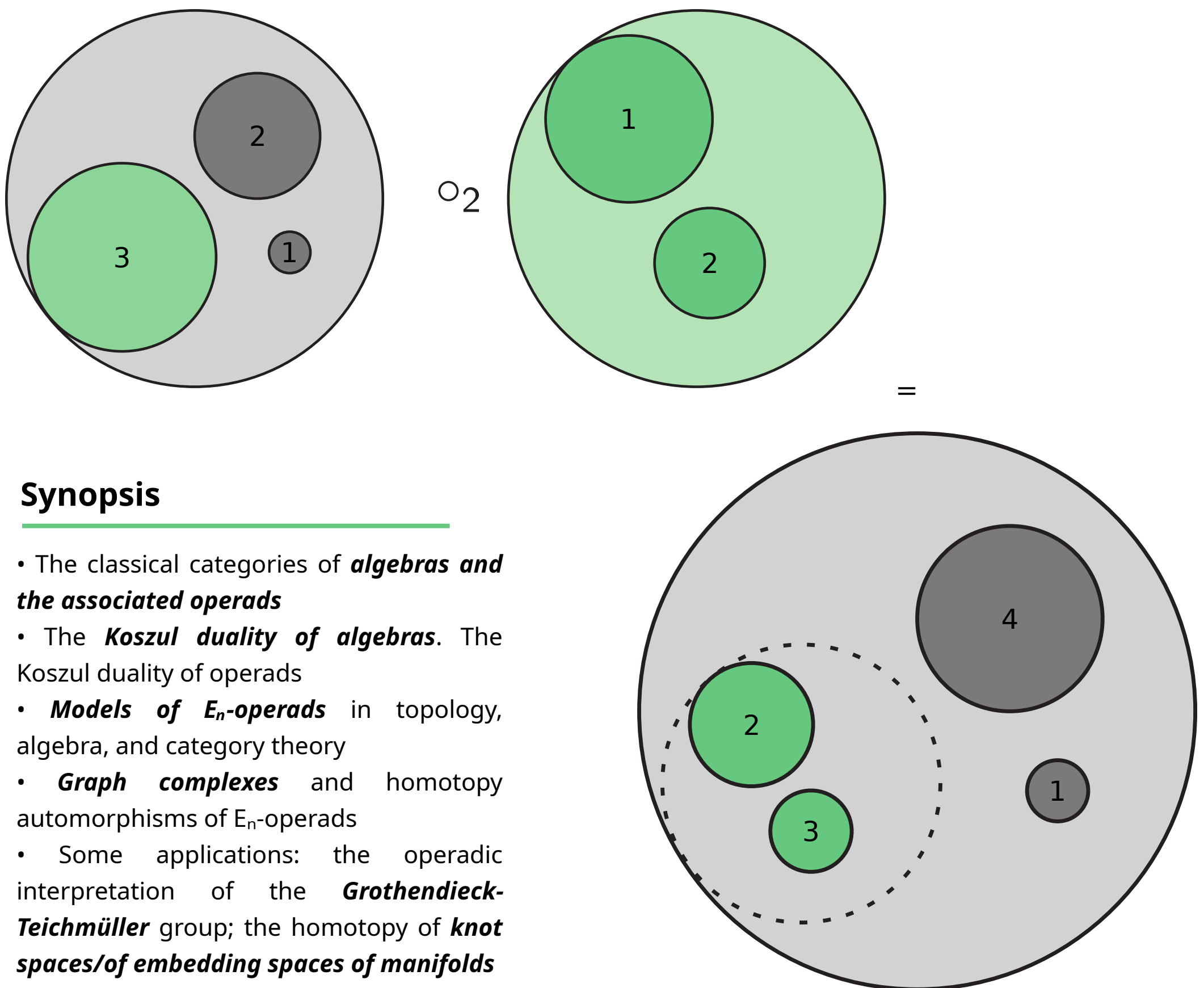
Operads, graph complexes and applications

January - March, 2025

Hybrid format by Zoom and at Lille University, France



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Synopsis

- The classical categories of **algebras and the associated operads**
- The **Koszul duality of algebras**. The Koszul duality of operads
- **Models of E_n -operads** in topology, algebra, and category theory
- **Graph complexes** and homotopy automorphisms of E_n -operads
- Some applications: the operadic interpretation of the **Grothendieck-Teichmüller** group; the homotopy of **knot spaces/of embedding spaces of manifolds**

Lectures happen on Mondays and Wednesdays (16x2h lessons and 4x2h tutorial/ seminar sessions). Participation is free but **registration is mandatory** for access to the **online activities** (notes and video-conferences of the lessons, and tutorials).

Program & Registration: <https://pro.univ-lille.fr/en/benoit-fresse/teaching/advanced-course-operads-graph-complexes-and-applications>

