



Lothar-Collatz-Kolloquium über Angewandte Mathematik

Antrittsvorlesung / Inaugural lecture

Donnerstag, den 16. Oktober 2025, um 14:30 Uhr, im Hörsaal 6

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Categorification in functional analysis

Zusammenfassung/Abstract:

Methods of category theory were introduced into functional analysis during the 1960s and have since then produced a homological toolbox for analytic problems. Prominent examples are the surjectivity of LPDOs, the extension of smooth functions, or the parameter dependence of solutions of LPDOs. In the talk we will firstly review some of the aforementioned classic results, all of which rely on the notion of derived functors. Then we will explain a more advanced categorical concept, the so-called derived category, and demonstrate how it can be used to obtain a categorification of an old problem attributed to Grothendieck.

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