

Fakultät für Mathematik, Informatik und Naturwissenschaften

Kolloquium über Reine Mathematik

Einladung zu einem Vortrag

Dienstag, 29. April 2025

17 Uhr, Geom H4

Prof. Ezra Getzler (Northwestern University)

<u>Title:</u> Higher holonomy

Abstract:

One of the most important aspects of Lie theory is the definition of holonomy, also known as parallel transport, or the path-ordered exponential. Lie's definition of holonomy amounts to the statement that a (sufficiently small) connection on the unit interval $0 \le t \le 1$, that is, system of linear first-order non-autonomous ordinary differential equations, is gauge equivalent to an autonomous system, that is, a system whose coefficients are independent of the parameter t.

In this talk, we explain an approach to higher Lie theory. The interval is replaced by a higher-dimensional cube, the Lie algebra is replaced by a graded Lie algebra g, and the connection 1-form is replaced by an inhomogenous differential form, whose k-form component lie in the degree 1-k component of g.

The higher-dimensional analogue of autonomy is extracted from the proof of the de Rham theorem, and our main result may be formulated as a fixed-point problem, just as for ordinary differential equations.

vor dem Vortrag (ab 16.30 Uhr) stehen im Foyer vor Hörsaal H4 Kaffee und Tee bereit.