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Prof. Dr. Gerd Wachsmuth



## Forschungsseminar Analysis und Optimierung Sommersemester 2026

Im Rahmen des Forschungsseminars spricht am **Donnerstag, den 20. August 2026**

### Prof. Huyuan Chen

Shanghai-Institut für Mathematik und Interdisziplinäre Wissenschaften, Shanghai, China

**Titel:** Solutions of Semilinear Equations on the Integer Lattice Graphs

**Inhalt:** In this talk, I will present results on positive solutions to semilinear elliptic equations on lattice graphs, focusing on two specific models. The first part concerns Kazdan–Warner-type equations

$$-\Delta u = \epsilon e^{ku} + \beta \delta_0$$

on the two-dimensional integer lattice graph  $\mathbb{Z}^2$ . We establish the existence of a continuous family of finite-energy solutions. In the second part, we will show the existence and nonexistence of positive solutions to the Lane–Emden equation

$$-\Delta u = Qu^p$$

on the  $d$ -dimensional integer lattice  $\mathbb{Z}^d$ , as well as in half-space and quadrant domains, with zero Dirichlet boundary conditions imposed in the latter two cases.

**Weitere Details zum Seminar:** Der Vortrag findet in Raum HG 3.45 des Zentralcampus Cottbus der BTU statt.