

Einladung Würzburger Mathematisches Kolloquium

Julius-Maximilians-Universität Würzburg • Institut für Mathematik

Juncheng Wei

Chinese University of Hong Kong / Giovanni-Prodi-Gastprofessor in diesem Semester

A Complete Solution to Brezis' Open Question 1.1

Donnerstag, 3. Juli 2025 • 14:15 Uhr

Seminarraum SE41 • Humboldt-Bau (Emil-Fischer-Straße 41, 97074 Würzburg)

Der Vortrag wird auch als Zoom-Meeting übertragen: go.uni-wue.de/ifmcolloquium-zoom

Abstract. In 2023, H. Brezis published a list of his "favorite open problems" that he raised through his career and that have resisted so far. We completely solve the first one – Open Problem 1.1 – in Brezis's favorite open problem list: the existence of solutions to the long-standing Brezis-Nirenberg problem on a three-dimensional ball:

$$\Delta u + \lambda u + u^5 = 0 \text{ in } B_1; u = 0 \text{ on } \partial B_1$$

A key idea is to use the sign-changing solutions to Yamabe problem. (Joint work with L. Sun and W. Yang.)

