Vorlesung: Differential Geometry IV

Prof. Dr. Thomas Walpuski

SS 2023

This lectures course meets every **Tuesdays, Thursdays 9:15–11:00** (lectures) and **Tuesdays 11:15–13:00** (exercises) during the summer semester 2023 in **1.114**. If you have any questions, contact me at thomas.walpuski@hu-berlin.de. Please, sign up for the Moodle at https://moodle.hu-berlin.de/course/view.php?id=118890 (key: dg4).

Topics

The purpose of this lecture course is to discuss various ideas, methods, and results in geometric analysis. Instead of treating a rather narrow topic in great depth, the goal of this course is to be broad (possibly at the expense of being somewhat disconnected). Here is a list of topics that I plan to touch upon.

(1) **Unique continuation**.

(2) **The Kazdan–Warner equation, metric uniformization**.

(3) **The Hitchin–Kobayashi correspondence for vortices**

(4) **Isospectral Riemannian manifolds**.

(5) **Alexandrov's Soap Bubble Theorem**.

(6) **Eells–Sampson's work on harmonic maps**.

(7) **Federer dimension reduction**.