

Math 241A — Topics in Geometry

Manifolds with Integral Curvature Bounds

Course Outline and Information

Fall 2016

Lecture: TR 11:00 - 12:15; HSSB 4201

Text: Notes from Instructor (Chapter 5 of my future book)

Instructor: Guofang Wei, South Hall 6503

email: wei@math.ucsb.edu

Office hours: MW 2-3pm, R 1:00-2:00pm or by appointment

Homework: Will be posted on Gauchospace or in class

Course outline:

Integral curvature lower bound is much weaker than pointwise bound. Many geometric problems lead to integral curvatures; for example, the isospectral problems, geometric variational problems and extremal metrics, and Chern-Weil's formula for characteristic numbers. Integral curvature also plays a very important role in the recent spectacular works of Tian-Zhang and Cheeger-Naber. Thus, integral curvature bounds can be viewed as an optimal curvature assumption here. We will study the geometry and topology of manifolds with integral curvature bounds, including my recent paper joint with Prof. Dai and Prof. Zhang.

References: See papers in GauchoSpace