華東師范大學｜数学科学学院
School of Mathematical Sciences,East China Normal University

2022年上海几何分析会议
程序册

华东师范大学闵行校区，上海
2022.11.04-2022.11.06

会议报告人（按姓氏拼音排序）

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组织委员会（按姓氏拼音排序）

刘博	刘钢	吴尉迟
郑宇	周林峰	朱萌

会议联系人

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日程安排

11 月 4 日

13:00-19:00 报到注册，地点：宝龙艺悦酒店（尚义路 39 弄 1 号）

11 月 5 日

线下会议地点：宝龙艺悦酒店五楼，银龙厅
地址：上海市闵行区尚义路 39 弄 1 号
腾讯会议 **ID: 389621780** 密码:256976
会议直播：**https://math.ecnu.edu.cn/shga2022.htm**

时间	会议内容	主持人
8:50-9:00	开幕式	邱瑞锋
9:00-9:50	忻元龙：极小曲面中的 Bernstein 问题	刘钢
9:50-10:20	合影、中场休息	
10:20-11:10	冷岗松：	吴尉迟
11:20-12:10	席东盟：Chord measures in Integral Geometry and their Minkowski Problems	
12:10-14:00	午餐	
14:00-14:50	东瑜昕：Prescribed Webster scalar curvatures on compact pseudo-Hermitian manifolds	周林峰
14:50-15:10	中场休息	
15:10-16:00	张永甲：A local Sobolev inequality on Ricci flow and its applications	周林峰
16:10-17:00	陈小杨：Rational ellipticity of Riemannian manifolds	
18:00-20:00	晚餐	

11 月 6 日

线下会议地点：宝龙艺悦酒店五楼，银龙厅
地址：上海市闵行区尚义路 **39** 弄 **1** 号
腾讯会议 **ID: 538760665**　　密码**:228242**
会议直播：**https://math.ecnu.edu.cn/shga2022.htm**

时间	会议内容	主持人
9:00-9:50	丁青：Almost complex structures on the 6-sphere and related problems	朱萌
9:50-10:10	中场休息	
10:10-11:00	熊革：The logarithmic Minkowski problem for quadrilaterals	朱萌
11:10-12:00	朱苗苗：Biharmonic functions on manifolds	
12:00-14:00	午餐	
14:00-14:50	李平：Vanishing theorems, rational connectedness and intermediate positivity	刘博
14:50-15:10	中场休息	
15:10-16:00	丁琪：Minimal graphs in Euclidean space with arbitrary codimension	刘博
16:10-17:00	杨义虎：A variational technique for harmonic metrics	
18:00-20:00	晚餐	

报告摘要

极小曲面中的 Bernstein 问题

忻元龙
复旦大学

Abstract: 综述我们在此问题多年来工作和所得成果。

TBA

冷岗松
上海大学

Abstract: 待定

Chord measures in Integral Geometry and their Minkowski Problems

席东盟
上海大学

Abstract: The new family of geometric measures, called chord measures, arises from the study of integral geometric invariants of convex bodies. The Minkowski problems for the new measures are proposed and attacked.

When the given 'data' is sufficiently regular, these problems are a new type of fully nonlinear partial differential equations involving dual quermassintegrals of functions, and include one of Christoffel-Minkowski Problem as a critical case. Major cases of these Minkowski problems are solved without regularity assumption. This is joint work with Erwin Lutwak, Deane Yang, and Gaoyong Zhang.

Prescribed Webster scalar curvatures on compact pseudo-Hermitian manifolds

东瑜昕

复旦大学

Abstract: In this talk, we will discuss the problem of prescribing Webster scalar curvatures on compact strictly pseudoconvex CR manifolds. In terms of the upper and lower solutions method and the perturbation theory of self-adjoint operators, we try to describe some sets of Webster scalar curvature functions which can be realized through pointwise CR conformal deformations and CR conformally equivalent deformations respectively from a given pseudo-Hermitian structure. This is a joint work with Yibin Ren and Weike Yu.

A local Sobolev inequality on Ricci flow and its applications

张永甲

上海交通大学

Abstract: It is a well understood fact that on a Ricci flow, the entropy and geometry are involved with each other. According to the recent development of Bamler, the Nash entropy is a more tractable substitute of Perelman's entropy, and it reveals the evolution of the local geometry to a degree. In this talk, I will explore the relation between the Nash entropy and local geometry along a Ricci flow. This talk is based on a joint article with Pak-Yeung Chan and Zilu Ma.

Rational ellipticity of Riemannian manifolds

陈小杨

同济大学

Abstract:. It was conjectured by Bott-Grove-Halperin that a compact simply connected Riemannian manifold with nonnegative sectional curvature is rationally elliptic, i.e., it has finite dimensional rational homotopy groups. We will discuss some recent progress on this conjecture.

Almost complex structures on the 6-sphere and related problems

丁青
复旦大学

Abstract: In this talk, we will show you how to construct almost complex structures on the 6-sphere by using of the octonions and the orthogonal group O(7). Some related problems, such as the Hopf's problem, G_2 geometry and G_2-binormal motion of curves in the Euclidean 7-space, are discussed or presented.

The logarithmic Minkowski problem for quadrilaterals

熊革
同济大学

Abstract: The classical Minkowski's existence theorem due to Minkowski and Aleksandrov characterizes the surface area measure S_K of a convex body K in R^n. More precisely, it solves the Monge-Ampere equation

$$\det(\nabla^2 h + h\mathrm{Id}) = f$$

on the unit sphere S^{n-1} where a convex body K with C_+^2 boundary provides a solution if $h = h_K$ for the support function h_K of K.

The logarithmic Minkowski problem

$$h\det(\nabla^2 h + h\mathrm{Id}) = f$$

was posed by Firey in his 1974 seminal paper. It seeks to characterize the cone volume measure $dV_K = \frac{1}{n} h_K dS_K$ of a convex body K containing the origin o. The logarithmic Minkowski problem is a challenging problem in convex geometry and receives much attention since 2012.

In this talk, we will present our very recent work on the logarithmic Minkowski problem. We prove the existence of solutions to the logarithmic Minkowski problem for quadrilaterals, and characterize the numbers of solutions completely.

This talk is based on the joint work with Liu Yude, Lu Xinbao and Sun Qiang.

Biharmonic functions on manifolds

朱苗苗
上海交通大学

Abstract: In this talk, we investigate the space of biharmonic functions with certain growth conditions over a complete noncompact Riemannian manifold with nonnegative Ricci curvature.

Vanishing theorems, rational connectedness and intermediate positivity

李平
同济大学

Abstract：紧致 kaehler 流形在 Ricci 曲率正定情形下有一些经典的拓扑几何限制。最近这些限制被证明在全纯截面曲率乃至更一般的 k-Ricci 曲率正定情形下仍然成立。我们将回顾这些经典结果并介绍最近的一些工作。

Minimal graphs in Euclidean space with arbitrary codimension

丁琪
复旦大学

Abstract: In this talk, we will focus on solutions to the minimal surface equation on Euclidean space and talk about regularity and rigidity of minimal graphs under the bounded 2-dilation condition.

A variational technique for harmonic metrics

杨义虎
上海交通大学

Abstract：待定