日程表

11月15日

时间	报告人	题目	主持人
8:20 - 8:30		开幕式	
8:35 - 9:15	苑立平	On F-convexity	
9:20 - 10:00	朱保成	Limiting shape of the Lp Minkowski problem	张高勇
10:00 - 10:30		合影/茶歇	
10:30 - 11:10	叶德平	Riesz \$\alpha\$-energy of log-concave functions and related Minkowski problem	河東注
11:15-11:55	武登辉	Refined affine isoperimetric inequalities and log-	冯 思
		Sobolev inequalities	
12:00 - 13:30		午餐	
14:00 - 14:40	东瑜忻	On Sobolev inequalities and isoperimetric	亩大明
		inequalities	
14:45 - 15:25	李晋	The Klain-Schneider Theorem and Applications	
15:30- 15:50	茶歇		
		Uniqueness of self-similar solutions to curvature	
15:50 - 16:30	王险峰	flows and uniqueness of solutions to isotropic	
		curvature problems	
16:35 - 17:15	艾万君	Variational Insights into the Generalized	孙玉华
		Seiberg-Witten Functional	
17:20 - 18:00	连艳陆	The Tammes Problem in $\operatorname{K}^{n}\$ and	
		Linear Programming Method	
18:30 - 20:30		晚餐	-

11月16日

时间	报告人	题目	主持人
8:30 - 9:10	葛建全	Pinching rigidity of minimal surfaces in	
		spheres	刘建成
9:15 - 9:55	陈大广	Symmetrization and Eigenvalue estimates for	
		the Laplacian in Riemannian manifolds	
10:00 - 10:20		茶歇	
10:25- 11:05	盛 利	A flow to the Orlicz-Minkowski-type	
		problem of p-capacity	
11:10 - 11:50	魏国新	Examples of complete λ -hypersurfaces in	曾春娜
		Euclidean space	
12:00 - 13:30		午餐	
14:00 - 14:40	王作勤	On Polya Conjecture for product domains	官中
14:45 - 15:25	韩英波	The uniformization conjecture in complete	百十
		non-compact Sasakian manifolds	
15:30 - 15:50		茶歇	
15:50 - 16:30	胡鹰翔	Tensor maximum principle and its	
		applications to extrinsic curvature flows	
16:35 - 17:15	李凤江	M\"{o}bius geometry of canal hypersurfaces	孙林林
		in $\mathrm{S} S^{n+1}$	
17:20 - 18:00	熊加威	Power convexity of solutions to elliptic	
		Partial Differential Equations	
18:30 - 20:00		晚餐	

11月17日

时间	报告人	题目	主持人
8:30 - 9:10	许明	Homogeneous geodesic and geodesic orbit	刘会立
		property in Finsler geometry	
9:15 - 9:55	陈波	Isolated singularities of Yang-Mills-Higgs	
		fields	
10:00 - 10:20		茶歇	
10:25 - 11:05	罗勇	Liouville type theorems for harmonic	王贺军
		functions on Kahler manifolds	
11:10 - 11:50	鲁新宝	The Lp Minkowski problem for the	
		electrostatic capacity	
12:00 - 13:30		午餐	
14:00 - 14:40	王二小	密铺镶嵌领域的一些最新进展	苦亡相
14:45 - 15:25	杨琪	Tiling in Euclidean spaces	赤 戸 想
15:30 - 15:50		茶歇	
15:50 - 16:30	王俊	On Boltyanski and Gohberg's partition	
		conjecture	李琼玲
16:35 - 17:15	陶江艳	Sections of convex bodies in the LYZ position	
17:20 - 17:50	刘文治	Relative Convexity	
18:05 - 18:20		闭幕式	
18:30 - 20:00		晚餐	

报告题目和摘要

苑立平 (河北师范大学)

题目: On *F*-convexity

摘要: Let \mathscr{F} be a family of sets in R^d (always d ≥ 2). A set M⊂R^d is called \mathscr{F} -convex, if for any pair of distinct points x, y∈M, there is a set F∈ \mathscr{F} such that x, y∈F and F⊂M. In this talk we'll discuss \mathscr{F} -convexity and related problems for some interesting families \mathscr{F} , including characterizations of \mathscr{F} -convex sets, \mathscr{F} -convex completions, generic \mathscr{F} -convexity, and \mathscr{F} -convex functions.

朱保成(陕西师范大学)

题目: Limiting shape of the \$L_p\$ Minkowski problem

摘要: In this talk, we will discuss the asymptotic shape of solutions to the \$L_p\$ Minkowski problem as \$p\to-\infty\$. We will present a class of convex polytopes, including all the regular polytopes, such that for any polytope \$T\$, there exists a solution \${\Omega^{(p)}}\$ to the \$L_p\$ Minkowski problem which converges to \$T\$ as \$p\to -\infty\$. This is joint work with Prof. Shizhong Du and Prof. Xujia Wang.

叶德平 (纽芬兰纪念大学)

题目: The Riesz \$\alpha\$-energy of log-concave functions and related Minkowski problem

摘要: The Riesz \$\alpha\$-energy is a fundamental concept with significant applications in mathematics, physics, and related fields. In this talk, I will discuss the first-order variation of the Riesz \$\alpha\$-energy within the family of log-concave functions, in terms of the Asplund sum. This variational formula naturally defines the Riesz \$\alpha\$-energy measure for log-concave functions and motivates the new Riesz \$\alpha\$-energy Minkowski problem, which reduces to a Monge-Ampère-type equation involving the Riesz \$\alpha\$-potential. This Minkowski problem can be regarded as a functional counterpart of the recent Minkowski problem for chord measures in integral geometry, as posed by Lutwak, Xi, Yang, and Zhang. I will also discuss solutions to the Riesz \$\alpha\$-energy Minkowski problem under certain mild conditions on the prescribed measure \$\mu\$.

武登辉 (西北农林科技大学)

题目: Refined affine isoperimetric inequalities and log-Sobolev inequalities

摘要: In this talk, we discuss an affine geometric extremal problems of Sylvester-Busemann type functionals with respect to Orlicz centroid

bodies. The result amounts to a class of affine isoperimetric inequalities. We also develop Maurey's and Bobkov-Ledoux's methods to prove modified Brascamp-Lieb inequalities and log-Sobolev inequalities.

东瑜昕 (复旦大学)

题目: On Sobolev inequalities and isoperimetric inequalities

李晋(上海大学)

题目: The Klain-Schneider Theorem and Applications

摘要: Valuations are pivotal invariants in addressing Hilbert's third problem. One important classification result in valuation Theory is called the Klain-Schneider Theorem. In this talk, I will talk about the original Klain-Schneider Theorem, its analogues on translatively exponential valuations, and their applications.

王险峰 (南开大学)

题目: Uniqueness of self-similar solutions to curvature flows and uniqueness of solutions to isotropic curvature problems

摘要: Self-similar solutions play an important role in the study of the asymptotic behaviors of curvature flows, and are closely related to some prescribed curvature problems. In this talk, we will discuss uniqueness of self-similar solutions to a large family of fully nonlinear curvature flows

by high powers of curvature, as well as uniqueness of solutions to some isotropic curvature problems.

艾万军 (西南大学)

题目: Variational Insights into the Generalized Seiberg-Witten Functional 摘要: Inspired by quantum field theory and gauge theory, this presentation explores a generalized Seiberg-Witten functional that encompasses both the classical Seiberg-Witten functional and the Kapustin-Witten functional as specific cases. We will examine the regularity of weak solutions and present partial existence results for the case when the structure group is Abelian. This work is conducted in collaboration with Shuhan Jiang and J ürgen Jost.

连艳陆(杭州师范大学)

题目: The Tammes Problem in Linear Programming Method

摘要: The Tammes problem in \widehat{R}^n is to find the arrangement of N points on a unit sphere S^{n-1} which maximizes the minimum distance $d_{n, N}$ between any two points. This problem is presently solved for several values of n and N. However, only for a few parameters optimal arrangements are known. In this paper, we prove the optimality conditions for general n by using linear programming method.

葛建全(北京师范大学)

题目: Pinching rigidity of minimal surfaces in spheres

摘要: In 1980, U. Simon proposed a quantization conjecture about the Gaussian curvature K of closed minimal surfaces in unit spheres: if $K(s + 1) \leq K \leq K(s)(K(s) := 2/(s(s + 1)), s \in N)$, then either K = K(s) or K = K(s + 1). Notice that the surface must be one of Calabi's standard minimal 2-spheres if the curvature is a positive constant. The cases s = 1 and s = 2 were proven in 1980s by Simon and others. In this talk we introduce a pinching theorem of Simon conjecture in the case s = 3 and also give a new proof of the cases s = 1 and s = 2 by some Simons-type integral inequalities. This is joint work with Weiran Ding and Fagui Li.

陈大广 (清华大学)

题目: Symmetrization and Eigenvalue estimates for the Laplacian in Riemannian manifolds

摘要: In this talk, we will report the symmetrization technique in Riemannian manifolds and submanifold. As applications, we obtain the estimates of the eigenvalues and eigenfunctions of the Laplacian with various boundary conditions. This is partly joint work with Prof. Haizhong Li and Dr. Yilun Wei.

盛利(四川大学)

题目: A flow to the Orlicz-Minkowski-type problem of p-capacity

摘要: The Orlicz-Minkowski problem for p-capacity is an extension of the Lp Minkowski problem, which has been widely studied. The existence of solutions to the OrliczMinkowski problem for the p-capacity was proved by Han Hong, Deping Ye and Ning Zhang for 1 , and by Ge Xiong $and Jiawei Xiong for p <math>\ge$ n. We use the flow method to obtain a new existence result of solutions to this problem. This is joint work with Jin Yang.

魏国新(华南师范大学)

题目: Examples of complete λ -hypersurfaces in Euclidean space 摘要: λ -hypersurfaces are stationary solutions to the isoperimetric problem in the Gaussian space, 0-hypersurfaces are exactly self-shrinkers of mean curvature flow. In this talk, we give a survey about examples of λ -hypersurfaces in Euclidean spaces. Especially, we focus on embedded examples of λ -hypersurfaces in Euclidean spaces.

王作勤(中国科学技术大学)

题目:On Polya Conjecture for product domains

摘要: In 1954 Polya proposed a conjecture for any Euclidean domain that compares each Dirichlet and Neumann eigenvalue with the leading term in

the Weyl asymptotics. In this talk I will review some backgrounds and known results on this conjecture, and discuss our result on this conjecture for thin product type domains/manifolds. This is a joint work with Xiang He.

韩英波(信阳师范大学)

题目: The uniformization conjecture in complete non-compact Sasakian manifolds

摘要: The CR analogue of Yau uniformization conjecture states that any complete noncompact Sasakian manifold of positive CR holomorphic bisectional curvature is CR biholomorphic to the standard Heisenberg group. In this talk, we first show that there exists a nonconstant CR holomorphic function of polynomial growth in a complete noncompact Sasakian manifold of nonnegative pseudohermitian bisectional curvature with the CR maximal volume growth property. Then by using Sasaki-Ricci flow, we affirm the partial result of the above conjecture on Sasakian manifold M^{2n+1} of nonnegative and bounded transversal bisectional curvature with maximal volume growth is CR biholomorphic to $\Omega \times R$, where Ω is a pseudoconvex domain of C^n .

胡鹰翔(北京航空航天大学)

题目: Tensor maximum principle and its applications to extrinsic curvature flows

摘要: In this talk, we will first review the tensor maximum principle, which was introduced by Hamilton in 1982. Then we will talk about the development of this technique, and its applications to the curvature flows, in particular, the extrinsic curvature flows in hyperbolic space. Moreover, we will provide a new tensor maximum principle for Riemannian manifolds with Neumann boundary, which can be used to establish the isoperimetric type inequalities for capillary hypersurfaces. This talk is based on my joint work with Haizhong Li (Tsinghua U.), Yong Wei (USTC), Tailong Zhou (Sichuan U.) and Bo Yang (Tsinghua U.).

李凤江 (重庆理工大学)

题目: M\"{o}bius geometry of canal hypersurfaces in \$\mathbb S^{n+1}\$ 摘要: We will talk about the M\"{o}bius geometry of canal hypersurfaces in \$\mathbb S^{n+1}\$. First, we consider principal curvature hyperspheres as points in de Sitter space \mathbb{S}_1^{n+2} to describe the canal hypersurface, enveloped by one-parameter family principle curvature hyperspheres. Then, employing the framework of M\"{o}bius geometry introduced by Prof. Changping Wang in 1998, we show the relationship of canal hypersurfaces and locally conformal flat ones for \$n \geq 3\$. Finally,

we consider the M\"{o}bius geometry of canal surfaces, and prove that a canal surface can be characterized by a smooth function satisfying two fifth-order partial differential equations. We also establish a link between canal surfaces, isothermic surfaces, and surfaces with closed M\"obius forms. This work is joint with Prof. Zhen Guo.

熊加威 (宁波大学)

题目: Power convexity of solutions to elliptic Partial Differential Equations

摘要: The convexity of solutions to elliptic partial differential equations is an important issue. In this talk, we establish some strict power convexity results in dimension two by the constant rank theorem method. This talk is based on the joint work with Chuanqiang Chen and Haohao Jia.

许明(首都师范大学)

题目:芬斯勒几何中的齐性测地线和测地轨道性(Homogeneous geodesic and geodesic orbit property in Finsler geometry)。 摘要:齐性测地线是由单参等距子群轨道提供的测地线。测地轨道空间是所有测地线都为齐性的流形。这些概念是齐性几何研究中的重要课题。在这个报告中,我将介绍我们近年来在齐性芬斯勒几何框架下研究相关课题所取得的一些成果,及其在常曲率芬斯勒球、正曲率齐性芬斯勒流形、闭测地线等课题中的应用。

陈波(华南理工大学)

题目: Isolated singularities of Yang-Mills-Higgs fields

摘要: In this talk, we show decay estimates near isolated singularities of n-dimensional Yang-Mills-Higgs fields defined on a fiber bundle, where the fiber space is a compact Riemannian manifold. As an application, we obtain removable singularity theorems for Yang-Mills-Higgs fields under certain energy conditions, which generalizes classical removable singularity theorems for Yang-Mills fields and harmonic maps. This is a joint work with Prof. Song Chong.

罗勇(重庆理工大学)

题目: Liouville type theorems for harmonic functions on Kahler manifolds 摘要: In this report we will give several new Liouville type theorems for harmonic functions on Kahler manifolds. Some of them are based on joint works with Dat Dinh Tien and Dung Nguyen Thac.

鲁新宝 (同济大学)

题目: The Lp Minkowski problem for the electrostatic capacity

摘要: The Minkowski problem for the electrostatic capacity, which was originally posed and solved by D. Jerison (Acta Math. 176 (1996), 1-47), is an extremely important variant among Minkowski type problems. In this talk, I will speak on our recent work on the Lp Minkowski problem for the

electrostatic capacity. Specifically, we prove the existence and uniqueness of the solution for p>1 and existence of the solution for 0 , respectively. This talk is based on joint works with Ge Xiong and Jiawei Xiong.

王二小(浙江师范大学)

题目:密铺镶嵌领域的一些最新进展

摘要:密铺或镶嵌是一种基本数学结构,广泛出现在自然和科技领域, 如蜂窝、晶体、分子结构、纳米材料等。报告人与香港科技大学严民 等经过六年合作攻关,以共约两百页的四篇文章研究了用全等五边形 "边对边"密铺球面的完整分类;其中三篇论文经过两年多审稿后发 表在 Adv. Math.他们建立了顶点分布统计、多种剖分构造、多种组合 和几何引理、相邻角推导符号系统、用代数几何求解高阶三角函数方 程组等一整套理论方法。

近几年他们又各自独立带领学生团队(硕士生廖艺熹、本科生徐应允、 钱品任等)用三篇论文完全分类了球面四边形单密铺,运用了分圆域 和三角丢番图方程的新方法,从而彻底解决球面边对边单密铺的百年 难题。

由十余名本硕博组成的浙师大密铺镶嵌创新工作室正在报告人带领 下分组探索着错边、曲边、多密铺等各种曲面上的密铺的完整分类问 题,及其在 3D 密铺的应用(比如单密铺空间的四面体完整分类这个 有着 2300 多年历史的公开难题),已取得了不少工作积累。 报告人也将综述这个本来小众的领域在近几年的多个突破 (Viazovska;Yang-Zong;Mann-Mann-vonDerau;Rao;Kedlaya-Kolpakov-Poonen-Rubinstein;Greenfeld-Tao;Smith-Myers-Kaplan-Strauss等),探 讨其与生物、材料和人工智能等领域的交叉。听众无需具备数学背景, 欢迎所有师生参加。

杨琪(重庆大学)

题目: Tiling in Euclidean spaces

摘要: Tiling is an ancient subject in mathematics. In this talk, we will talk about translative tiling in Euclidean spaces from perspectives of geometry and analysis, mainly about characterization of multiple tiling related periodicity of multiple tiling. We will present some history and recent results about multiple tiling.

王俊(天津师范大学)

题目: On Boltyanski and Gohberg's partition conjecture

摘要: In 1965, V. G. Boltyanski and I. T.Gohberg made the following conjecture, every bounded set in an n-dimensional normed space can be divided into 2ⁿ subsets of smaller diameters. This problem is closely related to Borsuk's partition problem and Hadwiger's covering conjecture. Up to now, all of them are far away from being completely solved. In this talk, we will briefly introduce the background of these three famous

problems and report our recent progress on the Boltyanski-Gohberg conjecture. We will show that the Boltyanski-Gohberg conjecture holds for a class of four-dimensional normed spaces and give an asymptotic solution to the conjecture. This talk is based on a joint work with Prof. F. Xue and Prof. C. Zong.

陶江艳(浙江师范大学)

题目: Sections of convex bodies in the LYZ position

摘要: Bounds for the volume of sections of convex bodies in the LYZ position in Rn are established. Specifically, we construct polytopes attaining the sharp bounds. Several applications are provided. This result is a subsequent research to the article entitled "Sections of convex bodies and Hanner polytopes" (Math. Ann., 2024) authored by LU Xinbao, TAO Jiangyan and XIONG Ge. This talk is based on the joint work with XIONG Ge.

刘文治(河北师范大学)

题目: Relative Convexity

摘要: Let D \subseteq R^d. A subset A \subseteq D is called relatively convex with respect to D, for short D-convex, if for any pair of points x,y \in A, xy \subseteq D implies xy \subseteq A. In this talk we will discuss some properties of the relative convexity, including characterizations of D-convex sets, relatively convex hulls and relative kernels.