第十届“子流形的几何与拓扑”学术会议

服务指南

会议日程

报告题目和摘要

陈省身数学研究所
Chern Institute of Mathematics

南开大学陈省身数学研究所
中国 • 天津

2023 年 10 月 27 — 31 日

学术委员会

忻元龙	彭家贵	李安民	王长平
张伟平	唐梓洲	李海中	

组织委员会

白承铭	冯惠涛	苏广想	李琼玲
李红琴			

致谢

衷心感谢以下单位和项目对本次会议的大力支持：

- 南开大学
- 南开大学陈省身数学研究所
- 国家自然科学基金委重点项目 11931007

服务指南

1. 10 月 27 日会议报到，地点：**南开大学八里台校区嘉园，泰达国际会馆**；
   10 月 28-30 日会议报告，地点：**南开大学八里台校区省身楼一楼多功能厅**；
   10 月 31 日离会。
2. 会议参会代表会议期间在嘉园用餐。
3. 为保证会场秩序，会议期间请将通讯工具设置为振动或静音模式。
4. 会议联系人:

   苏广想 （南开大学） 13820315279，guangxiangsu@nankai.edu.cn

   李琼玲 （南开大学） 18222175948，qiongling.li@nankai.edu.cn

   李红琴 （南开大学） 13820626278，lihongqin@nankai.edu.cn

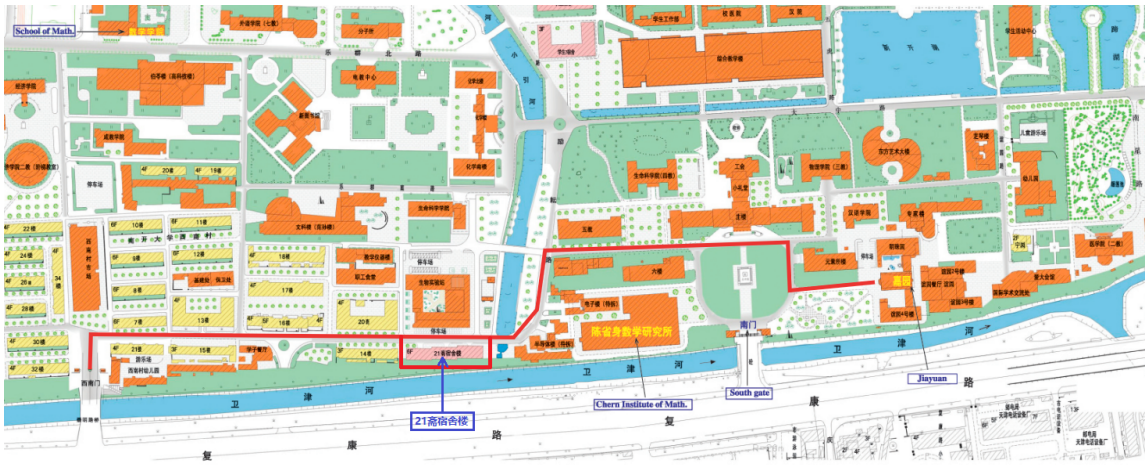
交通信息

1. 首都机场乘坐民航大巴或地铁至北京南站，乘高铁至天津站、天津南站或天津西站，上述火车站到南开大学见第 3、4、5 条。
2. 天津滨海国际机场乘坐地铁 2 号线（曹庄方向）至“天津站”下车，换乘地铁 3 号线（南站方向）至“周邓纪念馆站”下车，打车（8 分钟）或步行（20 分钟左右）至南开大学。从天津滨海国际机场打车至南开大学约 110 元。
3. 天津站乘坐地铁 3 号线（南站方向）至“周邓纪念馆站”下车，打车（8 分钟）或步行（20 分钟左右）至南开大学，或乘坐公交 8 路、832 路至八里台（南开大学东门），845 路至手表厂（南开大学西南门）下车。
4. 天津南站乘坐地铁 3 号线（小淀方向）至“周邓纪念馆站”下车，打车（8 分钟）或步行（20 分钟左右）至南开大学。
5. 天津西站乘坐地铁 1 号线（双林方向）至“营口道站”下车，换乘地铁 3 号线（南站方向）至“周邓纪念馆站”下车，打车（8 分钟）或步行（20 分钟左右）至南开大学，或在西站南广场乘坐公交 859 路至八里台（南开大学东门）下车。
6. 南开大学南门和西南门均在复康路上，泰达国际会馆在南开大学南门对面。

地址：天津市南开区卫津路 94 号, 邮编：300071。

注意：请根据情况选择**从学校东门或西南门入校，学校南门不开放**。

建议：打车至南开大学西南门（复康路西南村），进入西南门后右转至 21 斋门岗处，（此处检验入校身份证等，出租车不许入内），由此继续前行 5-7 分钟可至嘉园，路线如下图所示。



会 议 日 程

10 月 27 日（星期五）

会议报到，地点：南开大学八里台校区嘉园，泰达国际会馆

10 月 28 日（星期六）

会议报告，地点：南开大学八里台校区省身楼一楼多功能厅

时间	报告人	报告题目	主持人
08:30-09:00	开幕式		冯惠涛
09:00-10:00	田　刚	Geometric Stability Theory revisited	张伟平
10:00-10:20	茶歇		
10:20-11:05	葛建全	Developments and applications of isoparametric foliations	唐梓洲
11:15-12:00	楚健春	A Liouville theorem for p-Monge-Ampere equation	史宇光
12:00-13:00	午餐		
14:00-14:45	盛　利	Extremal Metrics on Toric Manifolds	陈兵龙
14:55-15:40	许小卫	On Chern-minimal surfaces in Hermitian surface	丁　青
15:40-16:00	茶歇		
16:00-16:45	杨　翎	On complete space-like stationary surfaces in 4-dimensional Minkowski space with graphical Gauss image	傅吉祥
16:55-17:40	吴云辉	Recent developments on random hyperbolic surfaces of large genus	郑方阳
18:00-20:00	晚餐		

10 月 29 日（星期日）

会议报告，地点：南开大学八里台校区省身楼一楼多功能厅

时间	报告人	报告题目	主持人
08:40-09:40	方复全	TBA	张伟平
09:40-10:20	合影，茶歇		
10:20-11:05	丁　琪	Minimal graphs of high codimensions	朱熹平
11:15-12:00	王　鹏	Willmore surfaces in spheres: geometry, analysis and topology	陈　群
12:00-13:00	午餐		
14:00-14:45	张　棣	On the mean curvature flow of submanifolds in the standard Gaussian space	盛为民
14:55-15:40	王相生	Some progress on Llarull's theorem and its generalizations	张　晓
15:40-16:00	茶歇		
16:00-16:45	李同柱	Dupin hypersufaces in S^{n+1}	李海中
16:55-17:40	邓富声	多复变 L^2 理论的逆与全纯向量丛正性	杨义虎
18:00-20:00	晚餐		

10 月 30 日（星期一）

会议报告，地点：南开大学八里台校区省身楼一楼多功能厅

时间	报告人	报告题目	主持人
09:00-10:00	周向宇	TBA	张伟平
10:00-10:20	茶歇		
10:20-11:05	简旺键	Some recent progress on finite time Kahler-Ricci flow	李嘉禹
11:15-12:00	万学远	Signature for flat unitary bundles over surfaces with boundary	刘小博
12:00-13:00	午餐		
14:00-14:45	韦　勇	Weighted geometric inequalities and applications	周家足
14:55-15:40	赵　唯	On the geometry of asymmetric metric measure spaces	程新跃
15:40-16:00	茶歇		
16:00-16:45	富　宇	Recent progress on biharmonic hypersurfaces	张　希
16:45	闭幕式		
18:00-20:00	晚餐		

10 月 31 日（星期二）

离会

感谢大家参会，欢迎再次光临南开大学陈省身数学研究所交流访问！

报告题目和摘要

Geometric Stability Theory revisited

田刚 院士（online）
北京大学

Abstract: In this general talk, I will discuss some aspects of Geometric stability theory, its connection to classical invariant polynomials and Geometric invariant theory, K- stability and its generalization as well as applications to complex geometry and algebraic geometry.

Developments and applications of isoparametric foliations

葛建全
北京师范大学

Abstract: We give a brief survey on isoparametric theory.

A Liouville theorem for p-Monge-Ampere equation

楚健春
北京大学

Abstract: The p-Monge-Ampere equation is a second order elliptic partial differential equation, which includes the Monge-Ampere equation (p=1) and the Laplacian equation (p=n) as two special cases. In this talk, we will discuss the p-Monge-Ampere equation and present a Liouville theorem. This is a joint work with Slawomir Dinew.

Extremal Metrics on Toric Manifolds

盛　利
四川大学

Abstract: An example of Apostolovet al. indicate that the condition of K-stability may not be correct one for general polarised manifolds. Szekelyhidi modified definition of K-stability by filtration and stated a variant of the Yau-Tian-Donaldson conjecture. We will talk about our proof of this variant of YTD conjecture for toric manifolds and homogeneous toric bundles. This is jointed with Li An-Min and Lian Zhao.

On Chern-minimal surfaces in Hermitian surface

许小卫
中国科学技术大学

Abstract: In the 1980s, S. Webster founded two beautiful formulae, which involve the geometry and topology of minimal surfaces in Kahler surfaces. In this talk we develop the theory of S. Webster to the Chern-minimal surfaces in Hermitian surfaces. We also introduce the compactness of Chern-minimal surfaces.

On complete space-like stationary surfaces in 4-dimensional Minkowski space with graphical Gauss image

杨　翎
复旦大学

Abstract: Concerning the value distribution problem for generalized Gauss maps, we not only generalize Fujimoto's theorem to complete space-like stationary surfaces in 4-dimensional Minkowski space, but also estimate the upper bound of the number of exceptional values when the Gauss image lies in the graph of a rational function f of degree m, which is determined by the number of solutions of $f(w)$ =conjugate of w, showing a sharp contrast to Bernstein-type results for minimal surfaces in 4-dimensional Euclidean space. Moreover, we introduce the concept of conjugate similarity on $SL(2, C)$ to classify all degenerate stationary surfaces (i.e. $m \leq 1$), and establish several structure theorems for complete stationary graphs in the Minkowski space from the viewpoint of the degeneracy of Gauss maps.

Recent developments on random hyperbolic surfaces of large genus

吴云辉
清华大学

Abstract: In this talk, we report several very recent asymptotic results on certain classical geometric quantities viewed as random variables on the moduli space of Riemann surfaces for large genus (and many cusps). This subject was initiated by M. Mirzkhani in the early 2010s. This talk is based on several joint works with Hugo Parlier, Xin Nie, Yang Shen and Yuhao Xue.

方复全院士报告题目和摘要待定

Minimal graphs of high codimensions

丁　琪
复旦大学

Abstract: In this talk, I will discuss the existence and the rigidity of minimal graphs of high codimensions in Euclidean space. Here, we frequently need 2-dilation conditions on minimal graphs for certain subharmonicity or regularity. These are joint works with Professors J.Jost and Y.L. Xin.

Willmore surfaces in spheres: geometry, analysis and topology

王　鹏
福建师范大学

Abstract: The study of Willmore surfaces and Willmore functional in spheres play important roles in the global differential geometry and lead to important progress in several directions. In this talk we will focus on the following three topics: classification of Willmore 2-spheres, characterization of the Clifford torus and topological rigidity of the Lawson embedded minimal surfaces $\xi_{g,1}$ of genus g.

On the mean curvature flow of submanifolds in the standard Gaussian space

张　棣
杭州电子科技大学

Abstract: In this talk, we are concerned with the regular geometric behavior, such as the blow-up properties, of the mean curvature flow of submanifolds in the standard Gaussian space. Also we observe that the mean curvature flow considered turns out to be a special variation of the conformal mean curvature flow.

Some progress on Llarull's theorem and its generalizations

王相生
山东大学

Abstract: Llarull's theorem is a beautiful result about the scalar curvature obtained by the index theory method. I will review some recent results about the generalization of Llarull's theorem and a new proof of Llarull's theorem in the odd dimensional case, which are joint works with Yihan Li, Guangxiang Su and Weiping Zhang.

Dupin hypersufaces in S^{n+1}

李同柱
北京理工大学

Abstract: In this talk, we introduce our recent work on Cecil conjecture on Dupin hypersurfaces in S^{n+1} for $r = 4$ distinct principal curvatures. Let $f : M^n \to S^{n+1}$ be a Dupin hypersurface with $r \geq 4$ distinct principal curvatures. In 2007, Cecil, Chi and Jense proposed the conjecture that every compact connected proper Dupin hypersurface with $r = 4$, or 6 distinct principal curvatures and constant Lie curvature is Lie equivalent to an isoparametric hypersurface in S^{n+1}. This is a joint work with Professor Changping Wang.

多复变 L^2 理论的逆与全纯向量丛正性

邓富声
中国科学院大学

摘要: 本报告介绍多复变中 d-bar 算子 L^2 理论的逆，给出向量丛曲率正性的分析刻画，并讨论向量丛直接像的曲率正性。

周向宇院士报告题目和摘要待定

Some recent progress on finite time Kahler-Ricci flow

简旺键
中科院数学所

Abstract: We will introduce the some background of the Kahler-Ricci flow and Song-Tian's analytical minimal model program. Then we will introduce some recent progress on finite time Kahler-Ricci flow. This is joint work with Song and Tian.

Signature for flat unitary bundles over surfaces with boundary

万学远
重庆理工大学

Abstract: This talk explores representations of the fundamental groups of compact surfaces with boundaries into Hermitian type Lie groups. We compare the signature of associated local systems to the Toledo invariant, extending the rho invariant to discontinuous class functions, first on $U(p,q)$, then on other groups through $U(p,q)$ embeddings. We unify three invariants - signature, Toledo, and rho - in the style of Atiyah-Patodi-Singer's signature formula for boundary manifolds. This is joint work with Professors Inkang Kim and Pierre Pansu.

Weighted geometric inequalities and applications

韦　勇
中国科学技术大学

Abstract: In this talk, we discuss some weighted geometric inequalities for domains in space forms. First, we consider a weighted isoperimetric inequality which compares boundary momentum, boundary area and enclosed volume for a star-shaped and mean convex domain in the Euclidean space. As an application, we prove the Weinstock type inequality on the first non-zero Steklov eigenvalue for such domains. Second, we consider the weighted Alexandrov-Fenchel type inequalities which involve weighted curvature integrals and quermassintegrals for domains in space forms. For the proof, we used inverse curvature flows. The talk is based on some joint work with Yingxiang Hu, K.-K. Kwong, Haizhong Li and Tailong Zhou.

On the geometry of asymmetric metric measure spaces

赵　唯
华东理工大学

Abstract: The talk is devoted to the study of Gromov-Hausdorff convergence, stability and gradient flow of asymmetric metric measure spaces. While the compact setting is mostly similar to the symmetric case, the noncompact case provides various surprising phenomena. A wide class of irreversible spaces is provided by Finsler manifolds, which serve to construct various model examples by pointing out genuine differences between the symmetric and asymmetric settings.

Recent progress on biharmonic hypersurfaces

富　宇
东北财经大学

Abstract: A longstanding conjecture on biharmonic submanifolds, proposed by Bang-Yen Chen in 1991, is that any biharmonic submanifold in a Euclidean space is minimal. In this talk, we will review some recent progress of Chen's conjecture and related biharmonic conjectures. In particular, I will report our new techniques to settle Chen's conjecture and BMO conjecture on hypersurfaces for dimension 5. This work is jointly with Prof.Min-Chun Hong and Dr.Xin Zhan.