0. 倪磊, Complex homogenous manifolds

2025 年 3 月 28 日（周五） 16：00-17：00

静远楼 1506 学术报告厅

摘要：In this joint work with N. Wallach we give simple direct proofs of the celebrated results of H.-C. Wang, Tits, etc. The method also gives new information which is useful for understanding some fine structure of complex homogenous manifolds.

报告人简介：倪磊教授是浙江师范大学特聘教授。 在复旦大学获理学学士与硕士学位后，1998 年于加州大学尔湾分校获博士学位。先后在美国普渡大学，斯坦福大学任助理教授，2002 年开始在加州大学圣地亚哥分校任教，2009 年被评为终身教授。倪磊教授主要从事微分几何、几何分析、复几何等方向的研究，在几何分析、非线性偏微分方程、复几何及相关领域均有一流的原创性工作。在 JAMS, Invent. Math., CPAM., JEMS, JDG, AJM, GAFA 等国际顶尖杂志发表 SCI 论文 70 多篇，出版专著 5 部。 从 1998 年至今连续获美国国家自然科学基金的支持，包括重点项目一项。倪磊教授曾获美国斯隆奖，被美国数学学会邀请作主要大会报告，是 Proceedings of AMS，Geometric flows，Internat. J. Math. 等国际期刊编委。

1. 李逸, G_2 几何和 G_2 流

2025 年 4 月 19 日（周六）上午 10：00-11:00

静远楼 1506 学术报告厅

摘要：在本报告中，我汇报下最近在 G_2 流上的工作。

报告人简介：李逸现任上海数学与交叉学科研究院教授。他于 2012 年从哈佛大学获得数学博士学位，师从大数学家丘成桐教授。李逸教授的研究兴趣包括微分几何、复几何、几何分析、几何流、非线性几何型偏微分方程、相对论。并已在国际一流学术期刊 Calc. Var. Partial Differential Equations、Comm. Anal. Geom.、Anal. PDE、Asian J. Math.、Math. Res. Lett.等杂志上发表了 27 篇论文。

2. 姚成建，On the basics of hypersymplectic structure and flow

2025 年 5 月 10 日（周六）下午 17：30-18:30

静远楼 1506 学术报告厅

摘要: Hypersymplectic structure on a 4-manifold is a triple of symplectic forms such that any nontrivial linear combination is symplectic. The hypersymplectic flow is a natural geometric flow designed to deform one given hypersymplectic structure in its cohomology class isotopically to a hyperKahler structure. In this talk, we will review the very basics of hypersymplectic structure and the flow, and then present some long time existence and convergence results about the flow based on joint works with Joel Fine and Weiyong He.

报告人简介：姚成建，上海科技大学副教授，主要研究方向为微分几何与数学物理。 相关成果发表在 Duke Mathematical J., Mathematische Annalen 以及 Advances in Mathematics 等国际知名杂志上。

3. 王宏玉, On DJ+ operator on higher dimensional almost Kahler manifold

2025 年 06 月 03 日（周二）下午 16：00

分析测试中心 103

摘要: In this paper, we define DJ+ operator that is a generalized operator on higher dimensional almost Kahler manifolds. In terms of DJ+ operator, we study-problem in almost Kahler geometry and the generalized Monge-Ampere equation on almost Kahler manifolds.

报告人简介：王宏玉，扬州大学数学科学学院二级教授，博士生导师。曾任国立新加坡大学教授、扬州大学数学科学学院院长。主要从事微分几何，偏微分方程及低维流形拓扑，在 Yang-Mills 场论、Chern-Hopf 猜想、近复几何的 Donaldson 问题、Floer 同调、Schrodinger flow 等方向做出突破性成果。主持国家自然科学基金面上项目 10 余项；在 JDG，JGA，Comm. Anal. Geom，Adv. Math.等期刊发表学术论文多篇。

4. 蒋飞达, Purely interior estimates for a kind of two dimensional Monge-Ampere equations

2025 年 6 月 4 日（周三）上午 10：00-11:00

泉山 17 号楼 101

摘要：In this talk, we discuss a kind of fully nonlinear equations of Monge-Ampere type, which can be applied to problems arising in optimal transport, geometric optics and conformal geometry. When the coefficient of the regular term has positive lower bound, the purely interior Hessian estimate is already known for higher dimensional case. When the coefficient of the regular term is equal to zero, singular solutions can be constructed for n ge 3, while the purely interior Hessian estimate is obtained for n=2 case. As a byproduct, a new and simple proof of the purely interior Hessianestimate for the two dimensional standard Monge-Ampere equation is provided.

报告人简介：蒋飞达，东南大学数学学院与丘成桐中心教授，博士生导师。研究领域为非线性偏微分方程。主要涉及 Monge-Ampere 型方程、k-Hessian 型方程等完全非线性偏微分方程、及其在最优质量传输、几何光学等问题中的应用；以及其他各类偏微分方程的理论和应用问题。已在 Adv. Math.，Comm. Partial Differential Equations，Calc. Var. Partial Differential Equations，Arch. Ration. Mech. Anal.等权威数学期刊上发表 30 余篇学术论文。

5. 史宇光, Positive mass theorem on singular spaces and some applications

2025 年 6 月 25 日（周三）上午 09:00-10:00

泉山校区 5 号楼 107

摘要：In this talk, I will discuss some positive mass theorems for certain singularspaces inspired by the dimension reduction techniques employed in the study of the geometry of manifolds with positive scalar curvature. In these results, we assume only that the scalar curvature is non-negative in a strong spectral sense, which aligns well with the stability condition of a minimal hypersurface in an ambient manifold with non-negative scalar curvature. As an application, we provide a characterization of asymptotic flat (AF) manifolds with arbitrary ends, non-negative scalar curvature and dimension less than or equal to 8. This also leads to positive mass theorem of AF manifolds with arbitrary ends and dimension less than or equal to 8 without using N.

Smale's regularity theorem for minimal hypersurfaces in a compact 8-dimensianal manifold with generic metrics.This talk is based on my recent joint work with He Shiliang and Prof. Yu Haobin.

报告人简介：史宇光现为北京大学教授和博士生导师，2005 年入选年教育部新世纪优秀人才支持计划；2007 年获得国家杰出青年科学基金项目资助。因在完备非紧 Riemann 流形几何的研究中做出了杰出贡献，以及在中国从事数学教学和研究中的重要贡献，于 2010 年获得 Ramanujan 奖。2016 年入选第二批国家高层次人才特殊支持计划科技创新领军人才。相关研究成果发表于 J. Differential Geom., Adv. Math.，Trans. Amer. Math. Soc., Comm. Anal. Geom.等权威数学期刊。