else{ ImgD.width=200; ImgD.height=200*image.height/image.width; } } } } function Load()
{ baseinnerHTML=document.all("base").innerHTML; personinfoinnerHTML=document.all
("personinfo").innerHTML; paperinnerHTML=document.all("paper").innerHTML;
prizeinnerHTML=document.all("prize").innerHTML; projectsinnerHTML=document.all
("projects").innerHTML; teachercourseinnerHTML=document.all("teachercourse").innerHTML;
mastersinnerHTML=document.all("masters").innerHTML; homeworkinnerHTML=document.all
("homework").innerHTML; document.all("personinfo").innerHTML=""; document.all("paper").innerHTML="";
document.all("prize").innerHTML=""; document.all("projects").innerHTML=""; document.all
("teachercourse").innerHTML=""; document.all("masters").innerHTML=""; document.all
("homework").innerHTML=""; } function showbase() { document.all
("base").innerHTML=baseinnerHTML; //alert("show"); } function showpersoninfo() { document.all
("base").innerHTML=personinfoinnerHTML; } function showpaper() { document.all
("base").innerHTML=paperinnerHTML; } function showprize() { document.all
("base").innerHTML=prizeinnerHTML; //alert(prizeinnerHTML) } function showprojects() { document.all
("base").innerHTML=projectsinnerHTML; } function showteachercourse() { document.all
("base").innerHTML=teachercourseinnerHTML; } function showmasters() { document.all
("base").innerHTML=mastersinnerHTML; } function showhomework() { document.all
("base").innerHTML=homeworkinnerHTML; } function MM_swapImgRestore() { //v3.0 var
i,x,a=document.MM_sr; for(i=0;a&&i

王伟

教授

English

基本信息

个人简介

主要论著

个人信息

部门	数学系
研究所	高等数学研究所
学历	博士
职称	教授
研究方向	多复变函数,线性微分算子,离散子群.
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个人简介

A. Description of research interest:

My research interest is analysis and its application to geometry and algebra: establishing analysis on some mathematical object and using the established analysis to find inner structure of the original object.

Recently I mainly focus on Cauchy-Riemann manifolds and more general parabolic manifolds. Cauchy-Riemann manifolds appear naturally in the theory of several complex variables. A parabolic manifold pointwisely has structure G/P, where G is a semisimple Lie group and P is a parabolic subgroup. For G to be SO(p,q), SU(p,q), PGL(n) with appropriate chosen P'

s, the corresponding geometries are well known conformal geometry, Cauchy-Riemann geometry and projective geometry, respectively. So one Lie group with one parabolic subgroup corresponds to one geometry and one analysis. This can be viewed as a modern version of Klein's "Erlangen program" in some sense. The flat models of parabolic manifolds are abelian or nonabelian nilpotent groups.

My program is as follows: Firstly, find differential operators invariant in geometry. This is essentially algebraic and is partially known. Secondly, use analysis on corresponding nilpotent groups to study these operators and corresponding function theory. Thirdly, analytical propositions, e.g. differential invariants, can be applied to the structure of parabolic manifolds.

Let me mention two applications. Let H be a discrete subgroup of G. Then analysis on the locally flat parabolic manifold $H\backslash G/P$ can be applied to study group H and the space of representations of H into G. The kernels of invariant differential operators can be used to construct irreducible representations of G corresponding to nilpotent coadjoint orbits.

B. Part of papers:

1. A discrete transformation and Triebel-Lizorkin spaces on the bidisc, Transactions of the American mathematical society 347:(4) (1995), 1351-1364.

2. Estimates of the Einstein-Kahler metric on a weakly pseudoconvex domain in , Mathematische Zeitschrift 223(1996), 535-545.

3. Estimates for d-bar equation on the generalized complex ellipsoids, Science in China (Series A) 44:(4), (2000), 452-466.

4. Positive solution of a subelliptic nonlinear equation on the Heisenberg group, Canadian Mathematical Bulletin 44:(3) (2001), 346-354

5. Holder regularity for d-bar on convex domains of finite strict type, Pacific Journal of Mathematics 198 (2001), 235-256.

6. Regularity of complex on nondegenerate Cauchy-Riemann manifolds, Science in China (Series A) 44:(4) (2001), 452-466.

7. Canonical contact forms on spherical CR manifolds, Journal of the

European Mathematical Society, Vol. 5, (2003), 245-273。

8. Embeddability of some three-dimensional weakly pseudoconvex CR structures. Canad. Math. Bull. 47 (2004), no. 1, 133--143.

9.(With P. Greiner and W. Staubach) Relative index on small deformations of embeddable CR structures of finite type, Math. Nachr. 278 (2005), no. 4, 379--400.

10. Representations of SU(p,q) and CR geometry. I, J. Math. Kyoto Univ. 45 (2005), no. 4, 759--780.

11. The Teichmüller distance on the space of spherical CR structures. Sci. China Ser. A 49 (2006), no. 11, 1523--1538.

12. N-capacity, N-harmonic radius and N-harmonic transplantation. J. Math. Anal. Appl. 327 (2007), no. 1, 155--174.

13. The Yamabe problem on quaternionic contact manifolds. Ann. Mat. Pura Appl. (4) 186 (2007), no. 2, 359--380.

14. On stability of CR-mappings between nilpotent lie groups of step two, Siberian Mathematical Journal, 48, (2007), no. 3, 408-427.

15. On a conformally invariant variational problem on differential forms, to appear in Nonlinear Analysis, 2008.

C. Onging research project supported by national nature science foundation: analysis on Cauchy-Riemann manifolds and its applications.

主要论著
主要奖励
主要项目
主要课程

研究生

作业课件

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