湖南大学 **HUNAN UNIVERSITY** **COLLEGE OF MATHEMATICS**

Some Mathematical Models in Applied Sciences: Singularities, Fractals and Non-Newtonian Fluids

Professor Vicentiu D. RADULESCU

University of Craiova
Mathematics Institute of the Romanian Academy

Abstract. We report on some original (new or older) results involving singular or degenerate patterns in nonlinear analysis. We are concerned with the following basic topics:
(i) vortices in Ginzburg-Landau systems;
(ii) variational problems on fractal sets;
(iii) non-Newtonian ('smart') electro-rheological fluids.
The final part of this talk is devoted to a spectacular formula due to the 'Man who Knew Infinity'. Some of the problems discussed in this talk have been raised by my Ph.D. and Habilitation Adviser, Professor Haim Brezis.

10:15 – 11:15 AM
TUESDAY, DECEMBER 17, 2019

MATH. BUILDING
425 on 4th floor

Yuelu Mt., Changsha, China

TITLE:DOUBLE-PHASE PROBLEMS WITH VARIABLE EXPONENT AND COMBINED GROWTH

报告人： **Vicentiu Radulescu**

University of Craiova & Mathematics Institute of the Romanian Academy, Bucharest

Vicentiu Radulescu博士是罗马尼亚Craiova大学和罗马尼亚科学院教授，是国际著名非线性分析研究领域的专家，其导师是法国科学院院士H Brezis，V. Radulescu教授曾获罗马尼亚科学院Simion Stoilow奖，他担任Advances in Nonlinear Analysis、Nonlinear Analysis、Journal of Mathematical Analysis and Applications等多个高水平数学期刊的编委与主编，已在高水平数学刊物上发表论文300余篇。

Abstract:We study a class of nonuniformly elliptic problems with several variable exponents and Dirichlet boundary condition. A feature of this talk is that the associated energy is a double-phase functional with unbalanced growth. The nature of the problem allows the presence of a reaction with combined behavior. By using analytic, variational and topological methods, we establish sufficient conditions for the existence of solutions, including the case where the problem exhibits critical and supercritical growth. The analysis includes three different settings: radial, nonradial, and singular.

时间：2019年12月14日 10:00—11:00
地点：21幢427

学术报告（Vicentiu D. Radulescu教授、陈思彤副教授，2019.12.02）

学术报告1

报 告 人：Vicentiu D. Radulescu教授 （罗马尼亚科学院数学研究所,罗马尼亚克拉约瓦大学）

报告时间：2019年12月02日（星期一）下午3：00—4：00

报告题目：Three sharp results in nonlinear analysis

报告地点：应用数学研究中心报告厅（计算机楼718）

欢迎广大师生参加！

摘要：We discuss three recent original results that refine classical contributions to nonlinear analysis and the qualitative analysis of solutions of elliptic equations. The main results included in this talk are the following:

(i) the generalized maximum principle holds with no monotonicity assumption;

(ii) the Keller-Osserman condition holds without any monotonicity condition and only the growth of the reaction at infinity is essential for the existence of solutions;

(iii) a necessary and sufficient condition for the existence of blow-up boundary solutions in a singular case of the logistic equation (open problem of H. Brezis).

报告人简介：

Vicentiu D. Radulescu教授是罗马尼亚著名数学家，罗马尼亚科学院数学研究所教授级研究员，克拉约瓦大学和AGH科技大学正教授。Vicentiu D. Radulescu教授在罗马尼亚克雷奥瓦大学数学系获得博士学位。于1999年获得罗马尼亚科学院西敏·斯托伊洛奖，2007年获得罗马尼亚研究委员会优秀研究奖等。他一共发表了300余篇研究论文并著有10余本书，论文引用次数高达6954次，同时赫希指数高达45。Vicentiu D. Radulescu教授目前是若干国际期刊的主编。
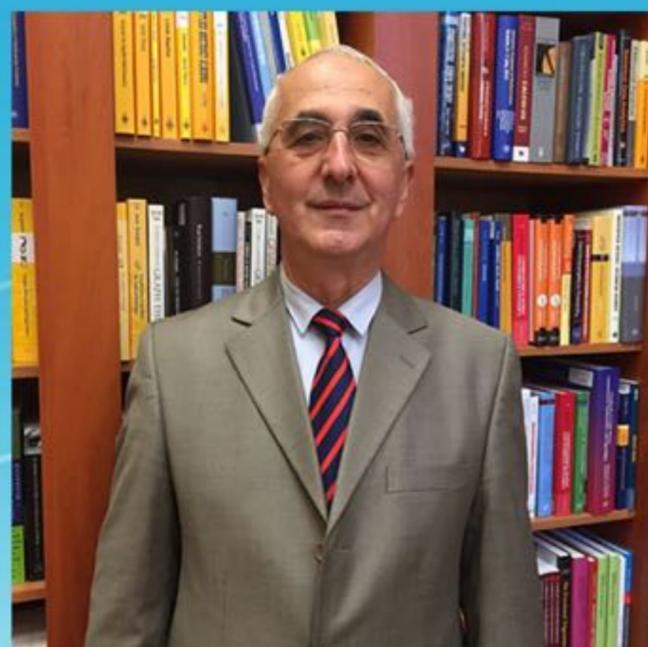
Problems with nonstandard growth and a discontinuity property of the spectrum

Prof. Vicentiu D. Radulescu

Institute of Mathematics of the Romanian Academy

Abstract: We consider a nonlinear eigenvalue problem driven by the sum of p and q-Laplacians. We show that the problem has a continuous spectrum. Our result reveals a discontinuity property for the spectrum of a parametric (p,q)-differential operator as the parameter goes to one. The proof relies on variational and topological methods combined with Nehari manifold arguments.

Date : 5th December
Time : 9:00A.M.-10:00A.M.
Venue : Room 344, Science Building

湖南工商大学 | 数学与统计学院

HUNAN UNIVERSITY OF TECHNOLOGY AND BUSINESS | School of Mathematics and Statistics

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罗马尼亚科学院Vicentiu D. Radulescu院士应邀来我院讲学

　　11月25日下午，应学院邀请，罗马尼亚科学院Vicentiu D. Radulescu 教授来我院作了题为 "Two classes of singular problems in nonlinear PDEs" 的学术报告，我院部分教师和学生聆听了此次报告，报告会由学院分党委副书记杨刚教授主持。

　　报告中，Vicentiu D. Radulescu教授详细介绍了Lane-Emden-Fowler方程和Logistic方程的奇异扰动问题的研究背景、动机和最新的研究进展，以及他在这方面的重要贡献，介绍了在弱的单调性条件下，Vázquez极大值原理，并提出了奇异扰动问题存在的研究空间。

　　本次学术报告不仅激发了同学们学习的热情，也给我院教师的教学与科研工作带来新的启示和思路，让我院的广大师生受益匪浅，同时也大力促进了学院的人才培养、学科建设和科研工作。

　　报告人简介：Vicentiu D. Radulescu教授，罗马尼亚科学院院士，著名数学家，罗马尼亚科学院数学研究所教授级研究员，克拉约瓦大学和AGH科技大学正教授。Vicentiu D. Radulescu教授在罗马尼亚克雷奥瓦大学数学系获得博士学位，师从国际著名数学家Haim Brezis。于1999年获得罗马尼亚科学院西敏·斯托伊洛奖，2007年获得罗马尼亚研究委员会优秀研究奖等。他一共发表了300余篇研究论文，并著有10余本书，论文引用次数高达6954次，同时赫希指数高达45。Vicentiu　　D.　　Radulescu教授目前担任15个国际著名期刊（SCI）的编委，如JMAA、DCDS-S、MMAS、CVEE、JGA、AA等，担任国际著名SCI期刊Nonl. Anal. Appl.，Adv. Nonl. Anal.，Nonlinear Analysis，Boundary Value Problems的主编。

学术报告

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VICENTIU RADULESCU

INSTITUTE OF MATHEMATICS OF THE ROMANIAN ACADEMY, BUCHAREST AND UNIVERSITY OF CRAIOVA, ROMANIA

Nonlinear Dirichlet (p,q)-problems with continuous spectrum

1:30PM--2:30 PM, December 10, 2019

Room 102, Math Building

Abstract:

We consider a nonlinear eigenvalue problem driven by the (p, q)-Laplace operator. We establish a striking result that shows both the existence of a continuous spectrum and a discontinuity property of the spectrum near the limiting value of the parameter. The proof combines variational and topological methods with basic properties of the associated Nehari manifold.

Brief Introduction:

Professor V Radulescu has received both his PhD and Habilitation at the Université Pierre et Marie Curie (Paris 6) under the coordination of Professor H. Brezis. His research field is at the interplay between nonlinear functional analysis, calculus of variations, and mathematical physics. He is Professorial Fellow at the Simion Stoilow Mathematics Institute of the Romanian Academy and full professor at the University of Craiova. He is also member of some international scientific society and member of editorial board of many international journals, including Editor-in-Chief and founder of Advances in Nonlinear Analysis, Editor-in-Chief of "Nonlinear Analysis" and "Boundary Value Problems". He is author of many books, including (with M. Ghergu) "Singular Elliptic Problems. Bifurcation and Asymptotic Analysis", Oxford University Press, 2008 and "Nonlinear PDEs: Mathematical Models in Biology, Chemistry and Population Genetics", Springer Monographs in Mathematics 2012. He is listed as a Highly Cited Researcher (Thomson Reuters). See more details at http://math.ucv.ro/radulescu/.

山东科技大学
Shandong University of Science and Technology

2019年"变分法与偏微分方程"国际研讨会

2019 International Workshop on
"Variational Methods and Partial Differential Equations"

Program

会 议 手 册

主办：山东科技大学

时间：2019.12.6-12.8

地点：数学与系统科学学院

Sponsor: Shandong University of Science and Technology；
The Introduction and Cultivation Project of Young and
Innovative Talents in Universities of Shandong Provience.

Tsingtao·China

Workshop Objective

Variational methods and partial differential equations is a relevant topic in Mathematics, both for the pure mathematical research and for concrete real-world applications. The aim of this conference is to bring together leading academic scientists and excellent young scholars in the fields of nonlinear analysis and partial differential equations in order to discuss recent advances and future perspectives and to stimulate collaborative research activities.

Invited Speakers:

Vicentiu D. Radulescu

(Institute of Mathematics of the Romanian Academy, Romania /University of Electronic Science and Technology, China.)

Zhi-Qiang Wang

(Utah State University, USA/Fujian Normal University, China.)

Short Talks:

Kexue Li (Xi`an Jiaotong University, China.)

Juntao Sun (Shandong University of Technology, China.)

Yuanze Wu (China University of Mining and Technology, China.)

Weiping Yan (Xiamen University, China.)

Chao Zhang (Harbin Institute of Technology, China.)

Fengrong Zhang (China University of Petroleum, China.)