

科目名	Course Title		
数理科学特論 (Topics in Mathematical Science)			
学科・専攻	Department/Program	受講年次	Grade
多元数理科学研究科			
授業形態	Class style	必修・選択の別	Compulsory or Elective
講義			
時間割コード	Registration code	開講期・曜日・時限	Semester, Day & Period
1610019		春学期 水曜	曜：1限時限
単位数	Credit	科目区分	Course type
2			
担当教員	Instructor	セルジュ リシャル (Richard Serge)	
所属研究室	Laboratory	Graduate School of Mathematics	
連絡先	Contact	richard@math.nagoya-u.ac.jp	
居室	Room	Sci. Bldg A, 237	

講義の目的とねらい	Course purpose
Title : Scattering theory.	
<p>This course will provide an overview on the main topics and tools related to scattering theory. The classical definitions as well as some of the most recent methods in scattering theory will be introduced. Depending on the interest of the audience, either the inverse problem, or the Lax-Phillips pairs, or a more PDE approach will also be studied. In order to provide a large panorama on the subject together with applications, some details might be omitted, but references for all proofs will be provided.</p>	
履修要件	Prerequisite
Knowledge on standard undergraduate analysis and linear algebra.	
履修取り下げについて	Course withdrawal
<可否> <条件>	
成績評価	Grading
Grades based on attendance and a written report.	
不可 (F) と欠席の基準	Criteria for "Absent" & "Fail" grades
関連する科目	Related courses
他学科学生の聴講について	About attend other

<可否> 可能

<条件>

This course is open for any students at Nagoya University. Motivated undergraduate students are also welcome.

教室 Class room

Mathematics Building, room 309

授業内容 Content

Tentative program: 1) Hilbert space and linear operators, 2) Self-adjoint operators and spectral theory, 3) Wave operators and scattering operator (time dependent approach), 4) The stationary approach, 5) Various examples, 6) Further investigations...

教科書 Textbook

Lecture notes will be provided for this course.

参考書 Recommended reading

Main references are

- 1) H. Baumgaertel, M. Wollenberg, Mathematical scattering theory, 1983
 - 2) D.R. Yafaev, Mathematical scattering theory: general theory, 1992
 - 3) D.R. Yafaev, Mathematical scattering theory: analytic theory, 2010
 - 4) K. Mochizuki, Spectral and scattering theory for second-order partial differential operators, 2017
- Other references will be provided during the lectures. All material will be available on

<http://www.math.nagoya-u.ac.jp/~richard/Scattering.html>

連絡方法 Contact method

Anytime in my office, or by appointment made by email.

その他 Remarks

Additional information and material will be added regularly on

<http://www.math.nagoya-u.ac.jp/~richard/Scattering.html>