

**Serge Richard**  
**Graduate school of mathematics**  
**Nagoya University**  
**Chikusa-ku**  
**Nagoya 464-8602**  
**Japan**

**richard@math.nagoya-u.ac.jp**



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

Born : July 20, 1975  
Citizenship : Swiss & Belgian  
Marital status : married, 1 child

### EDUCATION AND EMPLOYMENT

10 / 2016 - ... Designated Professor, Nagoya University (JP)  
On leave of absence from the Université de Lyon (F).

10 / 2013 - 09 / 2016 Designated Associate Professor, Nagoya University (JP)  
On leave of absence from the Université de Lyon (F).

08 / 2012 Reinstatement to my position of Associate Professor (MCF), Camille Jordan Institute, Université de Lyon (F).

09 / 2011 HDR defence, Université de Lyon (F)  
Jury members : J.-M. Bouclet, S. de Bièvre, V. Georgescu, C. Gérard, J. Kellendonk, C.-A. Pillet.

08 / 2010 - 07 / 2012 Visiting scholar, University of Tsukuba (JP).

09 / 2008 - 07 / 2010 Visiting scholar, University of Cambridge (UK)  
Visiting Fellow at Clare Hall, Cambridge.  
On leave of absence from the Université de Lyon (F).

11 / 2006 - ... Associate professor (MCF), Camille Jordan Institute, Université de Lyon (F).

10 / 2004 - 10 / 2006 Postdoctoral researcher in mathematical physics and analysis  
Camille Jordan Institute, Université de Lyon (F).

06 / 2004 PhD in Physics (mathematical physics), Université de Genève (CH)  
Title: Commutator methods in spectral and scattering theory  
Jury members : A. Alekseev, W. Amrein, G. M. Graf, M. Măntoiu.

08 / 2000 - 07 / 2001 Mathematics teacher in 3 classes of secondary school, Geneva (CH).

03 / 1999 MSc in theoretical physics, Université de Lausanne (CH)  
Prize of the Faculty of Sciences.

07 / 1998 BA in theoretical physics, Université de Lausanne (CH).

07 / 1994 High School Diploma, Gymnase cantonal de Vevey (CH)  
Awards in physics and history.

## Curriculum Vitae

### GRANTS

JSPS Grant-in-Aid for Young Scientists A no 26707005, 3 years.

Bonus for excellent research (PES), from Oct. 2012.

Research grant from the Japanese Society for the Promotion of Sciences for a stay in Tsukuba (JP), 2 years (2010 - 2012).

Grant for advanced researchers from the Swiss National Science Foundation for a stay in Cambridge (UK), 2 years (2008 - 2010).

CNRS grant for the network Quantum Spaces - Noncommutative Geometry for a stay in Lyon (F), 8 months (2005 - 2006).

Grant for prospective researchers, Swiss National Science Foundation for a stay in Lyon (F), 1 year (2004 - 2005).

### INVITATIONS

February 20 - 24, 2017	WPI-AIMR, Tohoku University, Sendai (Japan)
March 7 - 11, 2016	School of mathematics, UNSW, Sydney (Australia)
February 9 - 19, 2016	Facultad de Matemáticas, Pontificia Universidad Catolica de Chile, Santiago (Chile).
November 19 - 30, 2014	Facultad de Matemáticas, Pontificia Universidad Catolica de Chile, Santiago (Chile).
May 31 - June 15, 2013	Facultad de Matemáticas, Pontificia Universidad Catolica de Chile, Santiago (Chile).
December 1 - 15, 2012	Institut Mittag-Leffler, Stockholm (SU).
June 28 - July 12, 2012	Departamento de Matemáticas, Universidad de Chile, Santiago (Chile).
April 30 - May 5, 2012	Department of theoretical physics, University of Geneva (CH).
March 5 - 9, 2012	Department of mathematics, University of Columbia, Missouri (USA).
Nov. 19 - Dec. 2, 2011	Facultad de Matemáticas, Pontificia Universidad Catolica de Chile, Santiago (Chile).
September 19 - 23, 2011	Mathematics Department, Université Paris Sud, Orsay (F).
May 30 - June 2, 2011	Institut de mathématiques, Université de Lyon (F).
June 21 - 25, 2010	Centre Bernouilli, EPFL, Lausanne (CH).
May 23 - 28, 2010	Institut de mathématiques, Université de Lyon (F).
May 1 - 18, 2010	Facultad de Matemáticas, Pontificia Universidad Catolica de Chile, Santiago (Chile).
Feb. 26 - Mar. 14, 2010	School of Mathematics, University of Tsukuba (JP).
January 18 - 26, 2008	Graduate School of Mathematical Sciences, University of Tokyo (JP).
Nov. 20 - Dec. 1, 2006	Theoretical Physics Department, Université Paris Sud, Orsay (F).
October 4 - 14, 2006	London Math. Society, stays in Birmingham, Leicester, London (UK).
June 19 - 30, 2006	Mathematics Department, Université Paris Sud, Orsay (F).

## ACADEMIC ACTIVITIES

Co-organizer of the workshop on “Quantum walks, random walks and scattering theory on periodic systems”, Nagoya, January 21 - 22, 2015.

Member of the consultative board 25/26 of the University of Lyon, since Sept. 2012.

In charge of the weekly seminar of mathematical physics, Camille Jordan Institute, University de Lyon, Sept. 2012 – July 2013.

Reviewer for MathSciNet (more than 70 reviews) and referee for various mathematical journals.

Co-organizer of the workshop on “Scattering theory and higher degree traces”, Lyon, Dec. 3 - 4, 2009.

Co-organizer of the first meeting of the GDR “Quantum Dynamics” in Lyon, September 7 - 9, 2009.

In charge of the weekly seminar of mathematical physics, Camille Jordan Institute, Université de Lyon, Sept. 2007 - June 2008.

Organizer of the workshop “spectral theory and non-commutative geometry”, academic year 2007 - 2008.

## TEACHING EXPERIENCE

Master course: Hilbert space methods for quantum mechanics (spring 2016),

Calculus II (spring 2016), lecture and tutorial

Calculus I (fall 2015, fall 2016), lecture and tutorial,

Master course: K-theory for  $C^*$ -algebras, and beyond (spring 2015),

Master course:  $C^*$ -algebraic methods in spectral theory (spring 2014),

Linear algebra II (spring 2014, spring 2015), lecture and tutorial,

Linear algebra I (fall 2013, fall 2014), lecture and tutorial,

Calculus on  $\mathbb{R}^n$  (spring 2013), tutorial,

Analysis II (spring 2013), tutorial,

Analysis I and III (fall 2012), tutorial,

Complex analysis (spring 2008), lecture and tutorial,

Functional analysis (fall 2007), tutorial,

Advanced complex analysis (spring 2007), tutorial,

Calculus with several real variables (spring 2007, fall 2007, spring 2008), tutorial,

Electrodynamics (spring 2002, spring 2003), tutorial,

Classical mechanics (fall 2001, fall 2002), tutorial,

Mathematics for physicists (fall 1999, spring 2000, fall 2000, spring 2001), tutorial,

Regular mathematics teacher in 3 classes of secondary school (fall 2000, spring 2001).

## RESEARCH STUDENTS SUPERVISION

Supervision of the Master 1 unofficial seminar for 3 students, Spring & Fall 2016 :

Hideki Inoue : *Tomita-Takesaki theory, quantum statistical mechanics,*

Ippei Mimura (Spring only) : *K-theory for C\*-algebras,*

Benny Prasetya (Fall only) : *Hamilton-Jacobi equation,*

Furuya Takashi : *Introduction to PDE.*

Supervision of the 4<sup>th</sup> year unofficial seminar for 3 students, Spring & Fall 2015 :

Yukino Takeuchi : *Spectral theory,*

Hideki Inoue : *C\*-algebras,*

Ryusuke Narita : *Harmonic analysis.*

PhD student : Daniel Parra, Sept. 2013 – Jan. 2017 : *Spectral and scattering theory for crystal lattices.*

Member of the jury for the PhD thesis of Harold Bustos, Universidad de Chile : *Non-abelian duality for C\*-algebraic covariant structures,* February 2015.

Member of the jury for the PhD thesis of José Garcia Conejeros, Universidad de Chile : *Non-propagation for zero order pseudodifferential operators,* September 2013.

Initiation to research for 2 students of the ENS, Lyon, June - July 2013 :

Benjamin Celaries : *Dynamical systems and crossed products,*

Sènán-Grégory Dossa : *Trace and determinant in infinite dimensional Hilbert spaces.*

Organisation and supervision of the research stays of two young researchers (Daniel Parra and Harold Bustos) from Chile during their stay at the Camille Jordan Institute, Oct. 2012 - March 2013.

Supervisor for 3 students for Part II linear analysis, Lent term, University of Cambridge, 2009.

Supervision of master thesis (Jan. - June 2008) :

Sarra Smara : *On almost periodic functions,*

Alexandre Barrat : *Propagation estimates in scattering theory.*

## OTHER EXPERIENCE

I suggested, elaborated and coordinated the reordering of the library of the Camille Jordan Institute, from an alphabetical presentation of authors to a classification by subjects. The project has been realised from Sept. 2006 to June 2007.

## CONFERENCES AND SEMINARS

Seminar of mathematical physics, WPI AIMR Tohoku University, Sendai (JP), February 23, 2017

Seminar of mathematical physics, Université de Paris-Sud / Orsay (F), September 21, 2016

Seminar of mathematics physics, Université de Grenoble (F), September 19, 2016

Seminar of EDP, analysis and applications, Université de Lorraine / Metz (F), September 16, 2016

Seminar of analysis, geometry and algebra, Université de Lorraine / Metz (F), September 15, 2016

Seminar of analysis, Université de Bordeaux (F), September 12, 2016

Mini-course, School of mathematics, UNSW, Sydney (Australia), March 7 - 11, 2016

Conference **Spectral and Scattering Theory and Related Topics**, Kyoto (JP), January 20 - 22, 2016

Seminar of analysis, University of Hyogo, Himeji (JP), November 28, 2015

Workshop **Quantum walks, random walks and scattering theory on periodic systems,**

Nagoya (JP), January 21 - 22, 2015

Seminar of analysis, University of Tsukuba (JP), December 10, 2014

Conference **Spectral Theory and Mathematical Physics**, Santiago (Chile), November 24 - 28, 2014

Seminar of operator algebras, University of Tokyo (JP), October 1, 2014

## Curriculum Vitae

- Seminar of mathematical physics, University of Lyon 1 (F), March 14, 2014  
Conference **The 6th Nagoya Workshop on Differential Equations**, Nagoya (JP),  
March 10 - 12, 2014  
Conference **Himeji Conference on Partial Differential Equations**, Himeji (JP),  
February 20 - 21, 2014  
Seminar of differential equation, Nagoya University (JP), October 28, 2013  
Conference **Variational and Topological Methods in Nonlinear Phenomena**, Alghero (It),  
June 24 - 28, 2013  
Seminar on PDE and spectral theory, Pontificia Universidad Catolica de Chile, Santiago (Chile),  
June 13, 2013  
Seminar of analysis, Université de Nantes (F), May 17, 2013  
Seminar of the C\*-academy, Université d'Orléans (F), January 11, 2013  
Seminar of analysis, Institut Mittag-Leffler, Stockholm (SU), December 6, 2012  
Seminar of probability, statistics and mathematical physics, Université de Lyon (F), October 18, 2012  
Seminar on PDE and spectral theory, Pontificia Universidad Catolica de Chile, Santiago (Chile),  
July 5, 2012  
Seminar of analysis, Universidad de Chile, Santiago de Chile (Chile), July 4, 2012  
Seminar of analysis, Chuo University, Tokyo (JP), June 13, 2012  
Seminar of analysis, University of Tsukuba (JP), June 12, 2012  
Seminar of analysis, University of Okayama (JP), June 5, 2012  
Seminar of mathematical physics, University of Geneva (CH), May 2, 2012  
Seminar PDE and mathematical physics, University of Bordeaux (F), April 17, 2012  
Seminar of analysis, University of Columbia, Missouri (USA), March 8, 2012  
Seminar of analysis, Universidad de Chile, Santiago de Chile (Chile), November 30, 2011  
Seminar of analysis, Pontificia Universidad Catolica de Chile, Santiago (Chile), November 24, 2011  
Seminar of analysis Université d'Orsay (F), September 21, 2011  
Seminar of analysis (HDR defence), Université de Lyon 1 (F), September 16, 2011  
Seminar of mathematics, Ritsumeikan University, Kyoto (JP), June 27, 2011  
Conference **Operator theory & boundary value problems**, Orsay (F), May 25 – 27, 2011  
Seminar of mathematics, Kyoto Institute of Technology, Kyoto (JP), February 24, 2011  
Conference **Spectral and Scattering Theory and Related Topics**, Rims Kyoto (JP),  
February. 16 - 18, 2011  
Conference **The 3rd Nagoya Workshop on Differential Equations**, Nagoya (JP),  
February 14 - 15, 2011  
Seminar of mathematics, Institute for the Physics and Mathematics of the Universe (IPMU),  
Kashiwa, Tokyo (JP), December 14, 2010  
Seminar of analysis, University of Tsukuba (JP), December 1, 2010  
Seminar of mathematical physics, University of Sapporo, Hokkaido (JP), November 19, 2010  
Seminar of analysis, University of Hyogo, Himeji (JP), November 10, 2010  
Seminar of analysis, Pontificia Universidad Catolica de Chile, Santiago (Chile), May 6, 2010  
Cardiff Analysis Seminar, Cardiff (UK), March 24, 2010  
Conference **Spectral and scattering theory on graphs**, Tsukuba (JP), March 8 - 9, 2010  
Seminar: spectral problems in mathematical physics, Paris (F), February 8, 2010  
London analysis and probability seminar, Imperial College London (UK), January 28, 2010  
Seminar of analysis, University of Loughborough (UK), October 15, 2009  
Conference **ISAAC Congress**, London (UK), July 13 - 18, 2009  
Seminar of analysis, King's College London (UK), February 16, 2009  
Seminar of mathematical physics, University of Cambridge (UK), January 27, 2009  
Seminar of applied mathematics, University of Cambridge (UK), October 24, 2008  
Conference **Spectral and Scattering Theory for Quantum Magnetic Systems**, Marseille (F),  
July 7 - 11, 2008  
Seminar of analysis, University of Tsukuba (JP), January 23, 2008  
Seminar of analysis, University of Tokyo (JP), January 22, 2008  
Conference **Spectral and Scattering Theory and Related Topics**, Kyoto (JP), January 15 - 17, 2008

## Curriculum Vitae

- Conference **10th Quantum Mathematics International Conference**, Moeciu (RO),  
September 10 - 15, 2007
- Seminar of mathematical physics, Université de Lille (F), November 14, 2006
- Seminar of mathematical physics, Université de Grenoble (F), November 7, 2006
- Seminar of analysis, King's College London (UK), October 12, 2006
- Seminar of pure mathematics, University of Leicester (UK), October 9, 2006
- Seminar of analysis, University of Birmingham (UK), October 5, 2006
- Conference **Operators theory in Quantum Physics**, Prague (CZ), September 9 - 14, 2006
- Conference **Spectral Theory and its Applications**, Newton Institute, Cambridge (UK),  
July 24 - 28, 2006 (poster)
- Seminar of mathematical physics, Université de Paris Sud, Orsay (F), June 27, 2006
- Conference **Spectral Theory and Mathematical Physics, a Conference in Honor of Barry Simon's  
60th Birthday**, California Institute of Technology (USA), March 27 - 31, 2006 (poster)
- Seminar of mathematical physics, Université de Paris Sud, Orsay (F), February 9, 2006
- Seminar on partial differential equations, Université de Rennes (F), January 12, 2006
- Seminar of geometry, algebra and operator algebra, Université Blaise Pascal, Clermont-Ferrand (F),  
December 16, 2005
- Seminar of applied analysis, Université de Provence (F), October 18, 2005
- Seminar of mathematical physics, Université de Lyon 1 (F), October 7, 2005
- Conference **Operator Algebras and Mathematical Physics**, Bucharest (RO), August 10 - 17, 2005
- Seminar of analysis, Université de Nantes (F), July 5, 2005
- Seminar of geometry, algebra and operator algebra, Université Blaise Pascal, Clermont-Ferrand (F),  
May 13, 2005
- Seminar of theoretical physics, Institut de physique nucléaire de Lyon (F), April 26, 2005
- Seminar of mathematical physics, Université de Cergy-Pontoise (F), April 20, 2005
- Seminar of mathematical physics, Laboratoire de physique théorique d'Orsay (F), April 14, 2005
- Seminar of analysis and topology, Université de Lyon 1 (F), March 2, 2005
- Seminar of analysis and topology, Université de Lyon 1 (F), February 16, 2005
- Seminar of mathematical physics, ETH Zürich (CH), December 17, 2004
- Seminar of mathematical physics, Université de Genève (CH), September 27, 2004
- Conference **Topologie en physique**, Lyon (F), September 24, 2004
- Seminar of theoretical physics, Université de Genève (CH), June 25, 2004
- Seminar of mathematical physics, Université de Lyon 1 (F), April 2, 2004
- Seminar of mathematical physics, Université de Genève (CH), February 9, 2004
- Seminar on partial differential equations, Université de Paris Sud, Orsay (F), November 25, 2003
- Seminar of analysis, Université de Cergy-Pontoise (F), November 24, 2003
- Conference **Operator Algebras and Mathematical Physics**, Sinaia (RO), June 26 - July 4, 2003
- Seminar of theoretical physics, Ecole Polytechnique Fédérale de Lausanne (CH), May 28, 2003
- Conference **Quantum Hamiltonians with magnetic fields**, Bucharest (RO), September 8 - 14, 2002
- Seminar of mathematical physics, Université de Genève (CH), December 17, 2001
- Seminar of theoretical physics, Université de Lausanne (CH), March 15, 1999