

## Jan Philip Solovej CV (April 2012)

### Personal:

Professor Jan Philip Solovej

Born: June 14, 1961, Copenhagen, Denmark

Citizenship: Danish

Married, two Children

<http://www.math.ku.dk/~solovej>

### Workplace:

Institute for Mathematical Sciences

University of Copenhagen

Universitetsparken 5

DK-2100 Copenhagen, DENMARK

Email: [solovej@math.ku.dk](mailto:solovej@math.ku.dk)

### Education:

- Cand. Scient., University of Copenhagen, 1985
- Ph.D., Princeton University, 1989

**Research interests:** *Mathematical Physics:* Stability of Matter, Many-body theory, Atomic structure, Bose gases, Condensed matter Physics, Statistical mechanics, Semiclassics, Variational methods, Spectral theory, Partial differential equations

### Employment:

- 1989-90: Visiting Assistant Professor, Dept. of Math., University of Michigan
- 1990 (Fall): Post-doctoral fellow, Dept. of Math., University of Toronto
- 1991 (Spring): Member, School of Math., Institute for Advanced Study, Princeton
- 1991-1995: Assistant Professor, Dept. of Math., Princeton University
- 1995-1997: Research Professor (Forskningsprofessor), Dept. of Math., Aarhus Univ.
- 1997-present: Professor, Inst. for Math. Sciences, University of Copenhagen

### Visiting Positions:

- 1997 (Spring): Member, School of Math., Institute for Advanced Study, Princeton
- 2003-2004: Member, School of Math., Institute for Advanced Study, Princeton
- 2004 (2 months) Visitor Dept. of Physics, Princeton University
- 2005 (1 month) Visiting Professor, Universite Paris Dauphine
- 2007 (Spring) Mercator Guest Professor, Ludwig-Maximilians-Universität, München

### Honors, awards

- Member of the **The Royal Danish Academy of Sciences and Letters** (elected 2000)

- The 2001 University of Copenhagen **Teacher of the Year Award**
- The 2002 Friedman Rescue Award for significant contributions to Mathematical Physics.

### Grant participation

- 1990-91 US NSF Personal grant (No. DMS-9002416)
- 1992-95 US NSF Personal grant (No. DMS-9203829)
- 1996–2001 EU-network (TMR) *Partial Differential Equations and Quantum Mechanics*, Danish team coordinator
- 1996–1997, 1998–2001, 2002–2005, 2005, 2006–2008, 2009–2011 Danish natural Science research council (SNF and FNU) research grants, PI (co-applicant)
- 1997–2006 Danish National Research Foundation Center *MaPhySto*, PI, board member, and Copenhagen University representative
- 2002–2006 EU-network (IHP) *Postdoctoral Training program in Mathematical Analysis of Large Quantum Systems*, Danish team coordinator
- 2002–2007 ESF-programme *Spectral Theory and Partial Differential Equations* (SPECT), Member of the steering committee
- 2005–2008 Danish natural Science research council (SNF) *Center for Non-commutative Geometry*, PI
- 2005–2010 ESF-programme *Random geometry of large interacting systems and statistical Physics* (RGLIS), Danish coordinator
- 2010 Research grant from the Lundbeck foundation

### Board memberships and administrative duties:

- Vicepresident and Secretary Danish Mathematical Society (1998–2006)
- Danish coordinator of European Research Group in Mathematics and Quantum Physics (2000–2008)
- Chairman of the international committee of the science faculty at the University of Copenhagen (2001–2003)
- Member of the C18 commission for mathematical physics under the International Union of Pure and Applied Physics (IUPAP) (2003–2007)
- Board member (2004–2010) of Institute Mittag-Leffler, Stockholm (vicechair of the board 2009–10)
- Approximately 1-2 Danish evaluation committees per year

- Executive Committee member (elected 2006–2011), **secretary (2009-2011)** of the **International Association of Mathematical Physics**.
- Evaluator Swedish Research Council (latest 2005)
- Evaluator Canadian NSERC (latest 2006)
- Evaluator US NSF (latest 2004)
- Evaluator European Research Council (ERC) (2007, 2008 Starter Grants, 2011 Advanced grants)
- Member Norwegian Research Council (Fall 2007)
- Evaluator Norwegian Research Council (2008)
- Member of the European Mathematical Society prize committee 2008
- Member **The Danish Council for Independent Research | Natural Sciences (FNU)** (2008-2013), **vicechair of the council (2009-)**
- Member of the **International Scientific Committee for the 16th International Congress in Mathematical Physics** (Prague 2009)
- Chairman of the prize committee for the International Association of Mathematical Physics *Early career award* (2009)
- Member scientific committee for the British-Nordic Congress of Mathematicians, Oslo, 2009
- Member of scientific board of Groupement de recherche (GDR) "Dynamique quantique" (2009-2012)
- Member **Editorial board** *Journal of Mathematical Physics* 2010-2013.
- Member **Editorial board** *Journal of spectral Theory*.

**M.Sc. Students:** 16 M.Sc. (graduated), 2 current M.Sc.

**Ph.d. students:** 2 current students, 3 graduated: P.T. Nam (current position postdoc at Université Cergy-Pointoise) S. Fournais (current position: Prof. Århus University), T. Østergaard Sørensen (current position: Reader Imperial College)

**Post-docs:** Total number 7: P. Balodis Matesanz, W.L. Spitzer, D. Hasler, C. Hainzl, M. Lewin, N. Gilka, D. Lundholm

**Publications:** 77 publications including 2 collections edited and 1 monograph.  
(Citations: Publications in ISI=48, ISI-Citations=700, ISI-H-index=15)

## Invitations/organization to/of congresses, conferences and workshops

1. 1990: Joint AMS–MAA Meeting, Louisville, Kentucky, Special Session on Schrödinger operators
2. 1990: Western States Mathematical Physics Seminar, Pasadena, California
3. 1991: Conference on Semiclassical Methods and Microlocal Analysis, Paris
4. 1991: Meeting on Partial Differential Equations, Saint-Jean de Monts, France
5. 1991: Workshop in Schrödinger Operators, Aarhus University
6. 1991: **Plenary Lecturer** at the 1991 **International Congress on Mathematical Physics**, Leipzig, Germany
7. 1992: Conference on Differential Equations and Mathematical Physics, Georgia Institute of Technology, Atlanta, Georgia
8. 1992: State of Matter, Conference in honor of E. Lieb, University of Copenhagen
9. 1993: Workshop at Institute Mittag-Leffler, Sweden
10. 1993: Conference on Coherent States, Oak-Ridge National Laboratory, Tennessee
11. 1993: On Three Levels, Nato Advanced Workshop, Leuven, Belgium
12. 1993: Conference on Differential Equations, Athens, Ohio
13. 1993: Joint meeting of the American Mathematical Society and Deutsche Mathematik Vereinigung, Heidelberg, Germany
14. 1994: **Plenary Lecturer**, Conference on Differential Equations and Mathematical Physics, University of Alabama, Birmingham, Alabama
15. 1995: Danish-Swedish seminar, Copenhagen/Lund
16. 1995: Conference on the Heisenberg and Hubbard model Schrödinger Institute, Vienna, Austria
17. 1996: **Keynote Speaker**, **22nd Nordic Congress of Mathematicians**, Lahti, Finland
18. 1996: **Plenary Speaker**, Conference on Mathematical Results in Quantum Mechanics, Ascona, Switzerland

19. 1996: **Parallel Section Speaker, 2nd European Congress of Mathematics**, Budapest, Hungary.
20. 1997: Microlocal Methods in Geometric Analysis and Mathematical Physics, Fields Institute Toronto
21. 1997: Second European Meeting on PDE and Quantum Mechanics, Regensburg
22. 1997: Organized: The Mathematical Problems of Quantum Particles in External Fields, Aarhus Universitet
23. 1998: German Physical Society meeting, Regensburg, Germany.
24. 1998: Schrödinger operators with magnetic fields conference at the Schrödinger Institute, Vienna, 1998
25. 1998: Swedish Mathematical Society meeting, Lund
26. 1998: Conference in Partial Differential Operators and Spectral Theory held in honor of M.S. Birman, Stockholm
27. 1999: UAB-GIT International Conference on Differential Equations and Mathematical Physics, Birmingham, Alabama
28. 1999: **Main lecturer** at the inaugural of the new Mathematical Institute in Lund
29. 1999 Large Coulomb systems, Oberwolfach,
30. 1999: Analysis and mathematical physics, Conference in honor of the 80th birthday of Lars Gårding.
31. 1999: Organized: Workshop on microlocal analysis
32. 1999: Organized: Danish Mathematical Society, spring meeting, Aarhus Universitet)
33. 2000: Scientific Committee, Fourth European Meeting on Partial Differential Equations and Applications to Quantum Mechanics, Paris,
34. 2000: Organizing Committee: First AMS-Scandinavian International Mathematics Meeting, XXIII Scandinavian Congress of Mathematicians, Odense, Denmark
35. 2000: Special session organizer, XIII International Congress on Mathematical Physics, Imperial College, London, UK

36. 2000: Organized summerschool: “Quantum Field Theory - from a Hamiltonian point of view”, Sandbjerg, Sønderborg, Denmark
37. 2000: Organized: Øresundsseminar in analysis, Copenhagen
38. 2000: Journees semiclassiques, Reims France
39. 2000: Quantum Spectra and Dynamics, Haifa and Jerusalem
40. 2000: Geometry, Analysis and Mathematical Physics, Euresco Conference, San Feliu de Guixols,
41. 2001: Organized: symposium “Relativistic Quantum Systems and Quantum Electrodynamics”, Oberwolfach
42. 2001: Organized meeting on “Geometric Analysis - Spectral Invariants”, Copenhagen University
43. 2001: Organized Øresundsseminar, Copenhagen University
44. 2001: Organized: 2nd Danish Symposium on Applied Analysis, Copenhagen
45. 2001: Second Göteborg conference in Harmonic Analysis and Partial Differential Equations
46. 2001: Relativistic Quantum Systems and Quantum Electrodynamics, Oberwolfach
47. 2001: Invited lecturer, Enrico Fermi and the Universe of Physics, On the occasion of the **100th anniversary of Enrico Fermi**, Rome
48. 2001: Invited lecturer at the Swedish academy on the occasion of the award of the Schock prize to E. Lieb, Stockholm
49. 2002: Organized Øresundsseminarer in analysis in Lund and Copenhagen
50. 2002: Kick-off meeting of the EU Network in Mathematical Analysis of Large Quantum Systems, München.
51. 2002: Øresundssymposium in Lund
52. 2002: Stability Matters, Schrödinger instituttet in Vienna
53. 2002: Spectral Theory of Schrödinger Operators, Mittag-Leffler institute
54. 2003: Organized Øresundsseminarer in analysis in Lund

55. 2003: Organized Øresundsseminarer in analysis in Copenhagen
56. 2003: Organized *Mathematical Problems in Quantum Mechanics*, Lisbon
57. 2003: Deutsche Physikalische Gesellschaft Physikertagung, Hannover
58. 2003: Mathematical Sciences research Institute, Berkeley
59. 2003: **Plenary speaker XIV International Congress on Mathematical Physics**, Lisbon
60. 2003: **Plenary speaker** 90th Statistical Mechanics Meeting, Rutgers University, In honor of the 80th birthday of F. Dyson.
61. 2004: Organized “Spectrum and Quantum Mechanics” Satellite conference to the 4ECM, Stockholm
62. 2004 **Invited speaker 4th European Congress of Mathematicians** (4ECM)
63. 2004: **Main lecturer** (lecture series with 4 lectures) at workshop on “Large Many-Body Systems”. Warwick
64. 2003: Organized: 3rd Danish Symposium on Applied Analysis, Copenhagen
65. 2004: **Plenary speaker** QMath9, Giens, France
66. 2005: 2nd Joint meeting of AMS, DMV, and OMG.
67. 2005: Workshop on Open Quantum Systems, Schrodinger Institute, Vienna
68. 2005: 4th International Conference on Analysis and Quantum, Munchen
69. 2005: Workshop on differential equations, Middelfart, Denmark
70. 2005: Quantum Transport and Excitations from Macro to Nanoscale: Theory and Applications, Aalborg
71. 2005: Organized “Analysis and Quantum Theory”, Oberwolfach seminar
72. 2006: Organized session on Condensed Matter Physics at the 15th International Congress on Mathematical Physics, Rio
73. 2006: Workshop at Schrödinger Institute, Vienna
74. 2006: Mathematical and Numerical Aspects of Quantum Chemistry Problems Seminar, Oberwolfach

75. 2007: Multiscale and Variational methods in Material Science and Quantum Theory of Solids, Oberwolfach
76. 2007:DMV minisymposium Berlin
77. 2007: Analysis and Stochastics in Quantum Many-Body Systems, Max Planck Institute, Leipzig
78. 2007: Workshop on Aspects of Membrane Dynamics, KTH Stockholm,
79. 2007: Schrödinger Institute workshop
80. 2007: Organized session at joint Polish Math Society - AMS meeting, Warsaw,
81. 2007: Organized 4th Danish symposium on applied mathematics, Univ. of Copenhagen
82. 2007: Organized Øresundsseminar in Lund
83. 2008: Spectral Problems in Quantum Mechanics, Univ. Cergy-Pointoise, Paris
84. 2008: Organized Mathematical Aspects of General Relativity, workshop, Niels Bohr International Academy.
85. 2008: Oberwolfach Mini-Workshop: Mathematical Approaches to Collective Phenomena in Large Quantum Systems
86. 2008: Organized Workshop Quantum many-body systems; Bose-Einstein condensation , Centre de recherches Mathematiques, Montreal
87. 2008: Organized Conference Spectral Theory and Partial Differential Equations, Department of Mathematical Sciences Copenhagen
88. 2009: Worskhop on selected topics in spectral theory, Schrödinger institute, Vienna (2 visits)
89. 2009: Organized British-Nordic Congress of Mathematicians
90. 2009: Organized Øresund symposium in Lund
91. 2009: **Member Scientific committee** and invited session speaker at International Congress of Mathematical Physics, Prague
92. 2009: Oberwolfach workshop on Mathematics of Complex Quantum Systems
93. 2010: Invited speaker program on Complex Quantum Systems, National Univeristy of Singapore

94. 2010: Invited participant workshop on “Matter and Radiation”, Schrödinger institute, Vienna
95. 2010: Invited main speaker at “Summer School on Current Topics in Mathematical Physics”, Århus University
96. 2010: Invited main speaker at summer course on Quantum Many Body Systems, International Mathematical Summer Center, CIME Summer School, Cetraro
97. 2011: Invited speaker at Banff workshop on Density Functional Theory: Fundamentals and Applications in Condensed Matter Physics
98. 2011: Organizer Øresund seminar in Analysis, Lund February 25
99. 2011: Seminar speaker Imperial College, March
100. 2011: Seminar speaker Universität Bielefeld, May
101. 2011: Lecturer at Spectral Theory and its applications. LMS-EPSRC short Course June
102. 2011: Invited participant, Summer school on current topics in Mathematical Physics, Schrödinger Institute, Vienna, Aug
103. 2012: Invited speaker, Tokyo University, Feb
104. 2012: Invited speaker Conference on Partial Differential Equations, Himeji, Japan, Feb
105. 2012: Invited speaker, workshop, Universite Cergy-Pontoise, March
106. 2012: Invited speaker, Conference Spectral Days, Munich, April