

Curriculum vitae of Kenji YAJIMA

January 20, 2016

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Date of Birth: December 20, 1948
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Education:

1967-1971: Department of Mathematics, University of Tokyo
March 1971: Bachelor of Science
1971-1974: Department of Mathematics,
Graduate School, University of Tokyo
Feb. 1978: Doctor of Science, University of Tokyo

Job Experience:

1974: Assistant,
Department of Mathematics, University of Tokyo
1980: Assistant professor,
Department of Mathematics, Princeton University
1982: Associate professor,
Department of Pure and Applied Science, University of Tokyo
1990: Professor,
Department of Mathematical Sciences, University of Tokyo
2003: Professor,
Department of Mathematics, Gakushuin University
2014: Dean,
Faculty of Sciences, Gakushuin University

Visting Positions over two months:

Jan. 1978–Aug. 1978 : Research associate, Forschungs Institut für Mathematik
and Institut für Theoretische Physik, ETH Zürich

Sept. 1978–Dec.1978 : Visiting assistant professor,
University of Virginia

Sept. 1979– Jan. 1980 : Research associate,
Department of Physics, Princeton University

Feb. 1980– June 1980: Research associate,
Courant Institute, New York University

Sept. 1984– June 1985: Guest professor,
Theoretische Physik, Universität Wien

June 1995–Aug. 1995: Visiting professor,
Department of Mathematics, Johns-Hopkins University

Sept. 1995–Feb. 1996: Visiting fellow,
Courant Institute, New York University

Sept. 2002–Feb. 2003: Visiting professor,
Institut für Mathematik, Universität München

Feb. 2005–March 2005: Visiting professor,
Alta Matematica, Università di Roma I

Publication list of Kenji YAIMA

- 1 *Existence and regularity of propagators for multi-particle Schrödinger equations in external fields*, to appear in *Comm. Math. Phys.*
- 2 *Dispersive estimates for Schrödinger equations*. *Sugaku Expositions* **27** (2014), no. 2, 147–174.
- 3 (with Aiba, D.) *Schrödinger equations with time-dependent strong magnetic fields*. *Algebra i Analiz* **25** (2013), no. 2, 37–62; translation in *St. Petersburg Math. J.* **25** (2014), 175–194
- 4 (with Galtbayar, A.) *Resolvent estimates in amalgam spaces and asymptotic expansions for Schrödinger equations*. *J. Math. Soc. Japan* **65** (2013), 563–605.
- 5 *Schrödinger equations with time-dependent unbounded singular potentials*. *Rev. Math. Phys.* **23** (2011), 823–838.
- 6 *Dispersive estimates for Schrödinger equations*. (Japanese) *Sugaku* **62** (2010), 145–163.
- 7 (with Jensen, A.) *Spatial growth of fundamental solutions for certain perturbations of the harmonic oscillator*. *Rev. Math. Phys.* **22** (2010), 193–206.
- 8 (with Jensen, A.) *On L^p boundedness of wave operators for 4-dimensional Schrödinger operators with threshold singularities*. *Proc. Lond. Math. Soc.* (3) **96** (2008), 136–162.
- 9 (with Finco, D.) *The L^p boundedness of wave operators for Schrödinger operators with threshold singularities. II. Even dimensional case*. *J. Math. Sci. Univ. Tokyo* **13** (2006), no. 3, 277–346.
- 10 *The L^p boundedness of wave operators for Schrödinger operators with threshold singularities. I. The odd dimensional case*. *J. Math. Sci. Univ. Tokyo* **13** (2006), 43–93.
- 11 *Dispersive estimates for Schrödinger equations with threshold resonance and eigenvalue*. *Comm. Math. Phys.* **259** (2005), no. 2, 475–509.

- 12 *On time dependent Schrödinger equations*. Dispersive nonlinear problems in mathematical physics, 267–329, Quad. Mat., **15**, Dept. Math., Seconda Univ. Napoli, Caserta, 2004.
- 13 *Time-periodic Schrödinger equations*. Topics in the theory of Schrödinger operators, 9–69, World Sci. Publ., River Edge, NJ, 2004.
- 14 (with Galtbayar, A. and Jensen, A.) *Local time-decay of solutions to Schrödinger equations with time-periodic potentials*. J. Statist. Phys. **116** (2004), 231–282.
- 15 (with Zhang, G.) *Local smoothing property and Strichartz inequality for Schrödinger equations with potentials superquadratic at infinity*. J. Differential Equations **202** (2004), 81–110.
- 16 (with Galtbayar, A.; Jensen, A.) *The Nelson model with less than two photons*. Ann. Henri Poincaré **4** (2003), no. 2, 239–273.
- 17 (with Zhang, G-P.) *Schrödinger equations with superquadratic potentials*. Mathematical results in quantum mechanics (Taxco, 2001), 319–332, Contemp. Math., **307**, Amer. Math. Soc., Providence, RI, 2002.
- 18 (with Jensen, A.) *A remark on L^p -boundedness of wave operators for two-dimensional Schrödinger operators*. Comm. Math. Phys. **225** (2002), 633–637.
- 19 (with Zhang, G-P.) *Strichartz inequality and smoothing property for Schrödinger equations with potential superquadratic at infinity*. Tosio Kato's method and principle for evolution equations in mathematical physics (Sapporo, 2001). Surikaisekikenkyusho Kokyuroku No. **1234** (2001), 179–194.
- 20 (with Zhang, G-P.) *Smoothing property for Schrödinger equations with potential superquadratic at infinity*. Comm. Math. Phys. **221** (2001), 573–590.
- 21 *On the behaviour at infinity of the fundamental solution of time dependent Schrödinger equation*. Rev. Math. Phys. **13** (2001), 891–920.
- 22 (with Martinez, A.) *On the fundamental solution of semiclassical Schrödinger equations at resonant times*. Comm. Math. Phys. **216** (2001), 357–373.

- 23 (with Graffi, S.) *Absolute continuity of the Floquet spectrum for a nonlinearly forced harmonic oscillator*. *Comm. Math. Phys.* **215** (2000), 245–250.
- 24 (with Galtbayar, A.) *The L^p -continuity of wave operators for one dimensional Schrödinger operators*. *J. Math. Sci. Univ. Tokyo* **7** (2000), 221–240.
- 25 *L^p -boundedness of wave operators for two-dimensional Schrödinger operators*. *Comm. Math. Phys.* **208** (1999), no. 1, 125–152.
- 26 *Fundamental solutions of time-dependent Schrödinger equations*. (Japanese) *Sugaku* **50** (1998), 368–384.
- 27 *Boundedness and continuity of the fundamental solution of the time dependent Schrödinger equation with singular potentials*. *Tohoku Math. J. (2)* **50** (1998), 577–595.
- 28 *On fundamental solution of time dependent Schrödinger equations*. *Advances in differential equations and mathematical physics (Atlanta, GA, 1997)*, 49–68, *Contemp. Math.*, **217**, Amer. Math. Soc., Providence, RI, 1998.
- 29 *L^p -continuity of wave operators for Schrödinger operators and its applications*. *Proc. Korea-Japan PDE Conf. (Taejon, 1996)*, 13 pp., *Lecture Notes Ser.*, **39**, Seoul Nat. Univ., Seoul, 1997.
- 30 (with Kapitanski, L. and Rodnianski, I.) *On the fundamental solution of a perturbed harmonic oscillator*. *Topol. Methods Nonlinear Anal.* **9** (1997), 77–106.
- 31 *Smoothness and non-smoothness of the fundamental solution of time dependent Schrödinger equations*, *Comm. Math. Phys.* **181** (1996), 605–629.
- 32 *The $W^{k,p}$ -continuity of wave operators for Schrödinger operators. III. Even-dimensional cases $m \geq 4$* . *J. Math. Sci. Univ. Tokyo* **2** (1995), 311–346.
- 33 *The $W^{k,p}$ -continuity of wave operators for Schrödinger operators*. *J. Math. Soc. Japan* **47** (1995), 551–581.

- 34 *The $W^{k,p}$ -continuity of wave operators for Schrödinger operators. II. Positive potentials in even dimensions $m \geq 4$.* Spectral and scattering theory (Sanda, 1992), 287–300, Lecture Notes in Pure and Appl. Math., **161**, Dekker, New York, 1994.
- 35 *The $W^{k,p}$ -continuity of wave operators for Schrödinger operators.* Proc. Japan Acad. Ser. A Math. Sci. **69** (1993), no. 4, 94–98.
- 36 *Gevrey frequency set and semi-classical behaviour of wave packets.* Schrödinger operators (Aarhus, 1991), 248–264, Lecture Notes in Phys., **403**, Springer, Berlin, 1992.
- 37 *Schrödinger evolution equations with magnetic fields.* J. Analyse Math. **56** (1991), 29–76.
- 38 *Schrödinger evolution equations and associated smoothing effect. Rigorous results in quantum dynamics* (Liblice, 1990), 167–185, World Sci. Publ., River Edge, NJ, 1991.
- 39 *Existence, uniqueness and some properties of Schrödinger propagators.* Recent developments in quantum mechanics (Poiana Brasov, 1989), 381–394, Math. Phys. Stud., **12**, Kluwer Acad. Publ., Dordrecht, 1991.
- 40 (with Jensen, A.) *On the long range scattering for Stark Hamiltonians.* J. Reine Angew. Math. **420** (1991), 179–193.
- 41 (with Kato, T.) *Dirac equations with moving nuclei.* Ann. Inst. H. Poincaré Phys. Théor. **54** (1991), 209–221.
- 42 *On smoothing property of Schrödinger propagators.* Functional-analytic methods for partial differential equations (Tokyo, 1989), 20–35, Lecture Notes in Math., **1450**, Springer, Berlin, 1990.
- 43 *Exponential decay of quasi-stationary states of time-periodic Schrödinger equation with short range potentials.* Sci. Papers College Arts Sci. Univ. Tokyo **40** (1990), 27–36.
- 44 (with Kato, T.) *Some examples of smooth operators and the associated smoothing effect.* Rev. Math. Phys. **1** (1989), 481–496.

- 45 *Rate of decay at high energy of local spectral projections associated with Schrödinger operators.* J. Math. Soc. Japan 41 (1989), 117–142.
- 46 (with Kuwabara, Y.) *The limiting absorption principle for Schrödinger operators with long-range time-periodic potentials.* J. Fac. Sci. Univ. Tokyo Sect. IA Math. 34 (1987), 833–851.
- 47 *The quasiclassical limit of scattering amplitude. L^2 -approach for short range potentials.* Japan. J. Math. (N.S.) 13 (1987), 77–126.
- 48 *Existence of solutions for Schrödinger evolution equations.* Comm. Math. Phys. 110 (1987), 415–426.
- 49 *Quasiclassical approximation of scattering amplitude.* Proceedings of the conference on spectral and scattering theory for differential operators (Fujisakura-so, 1986), 214–220, Seizo Ito, Tokyo, 1986.
- 50 *The quasiclassical limit of scattering amplitude. Finite range potentials.* Schrödinger operators (Como, 1984), 242–263, Lecture Notes in Math., 1159, Springer, Berlin, 1985.
- 51 (with Okamoto, T.) *Complex scaling technique in nonrelativistic massive QED.* Ann. Inst. H. Poincaré, Phys. Théor. 42 (1985), 311–327.
- 52 *Large time behaviors of time-periodic quantum systems.* Differential equations (Birmingham, Ala., 1983), 589–597, North-Holland Math. Stud., 92, North-Holland, Amsterdam, 1984.
- 53 *The surfboard Schrödinger equations.* Comm. Math. Phys. 96 (1984), 349–360.
- 54 *Quantum dynamics of time periodic systems.* Mathematical physics, VII (Boulder, Colo., 1983). Phys. A 124 (1984), 613–619.
- 55 (with Tsutsumi, Y.) *The asymptotic behavior of nonlinear Schrödinger equations.* Bull. Amer. Math. Soc. (N.S.) 11 (1984), 186–188.
- 56 (with Kitada, H.) *Remarks on our paper: "A scattering theory for time-dependent long-range potentials"* Duke Math. J. 50 (1983), 1005–1016.

- 57 (with Kitada, H.) *Bound states and scattering states for time periodic Hamiltonians*. Ann. Inst. H. Poincaré Sect. A (N.S.) **39** (1983), 145–157.
- 58 (with Graffi, S.) *Exterior complex scaling and the AC-Stark effect in a Coulomb field*. Comm. Math. Phys. **89** (1983), 277–301.
- 59 *Classical scattering for relativistic particles*. J. Fac. Sci. Univ. Tokyo Sect. IA Math. **29** (1982), 599–611.
- 60 *Resonances for the AC-Stark effect*. Comm. Math. Phys. **87** (1982/83), 331–352.
- 61 *The quasiclassical approximation to Dirac equation. II. Scattering theory*. J. Fac. Sci. Univ. Tokyo Sect. IA Math. **29** (1982), 371–386.
- 62 *The quasiclassical approximation to Dirac equation. I*. J. Fac. Sci. Univ. Tokyo Sect. IA Math. **29** (1982), 161–194.
- 63 (with Kitada, H.) *A scattering theory for time-dependent long-range potentials*. Duke Math. J. **49** (1982), 341–376.
- 64 *Spectral and scattering theory for Schrödinger operators with Stark effect. II*. J. Fac. Sci. Univ. Tokyo Sect. IA Math. **28** (1981), 1–15.
- 65 *The quasiclassical limit of quantum scattering theory. II. Long-range scattering*. Duke Math. J. **48** (1981), 1–22.
- 66 *A multichannel scattering theory for some time dependent Hamiltonians, charge transfer problem*. Comm. Math. Phys. **75** (1980), 153–178.
- 67 *Spectral and scattering theory for Schrödinger operators with Stark effect*. J. Fac. Sci. Univ. Tokyo Sect. IA Math. **26** (1979), 377–390.
- 68 *The quasiclassical limit of quantum scattering theory*. Comm. Math. Phys. **69** (1979), 101–129.
- 69 *An abstract stationary approach to three-body scattering*. J. Fac. Sci. Univ. Tokyo Sect. IA Math. **25** (1978), 109–132.
- 70 *Scattering theory for Schrödinger equations with potentials periodic in time*. J. Math. Soc. Japan **29** (1977), 729–743.

- 71 (with Kako, T.) *Spectral and scattering theory for a class of non-selfadjoint operators*. Sci. Papers College Gen. Ed. Univ. Tokyo **26** (1976), 73–89.
- 72 *Nonrelativistic limit of the Dirac theory, scattering theory*. J. Fac. Sci. Univ. Tokyo Sect. IA Math. **23** (1976), 517–523.
- 73 *Eigenfunction expansions associated with uniformly propagative systems and their applications to scattering theory*. J. Fac. Sci. Univ. Tokyo Sect. IA Math. **22** (1975), 121–151.
- 74 *The limiting absorption principle for uniformly propagative systems*. J. Fac. Sci. Univ. Tokyo Sect. IA Math. **21** (1974), 119–131.