

Seung-Yeop Lee

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CITIZENSHIP	South Korea (Republic of Korea)	
EDUCATION	B.S., Physics, Seoul National University, February 1997 M.S., Physics, Pennsylvania State University, May 2001 Ph.D., Physics, University of Chicago, June 2007 (PhD advisor: Paul Wiegmann)	
EMPLOYMENT	Jame Franck Institute (University of Chicago), Temporary Research Professional June 2007–August 2007 Centre de recherches mathématiques, Université de Montréal , CRM-ISM Postdoctoral fellow; September 2007–August 2009 California Institute of Technology, Mathematics, Sherman Fairchild Research Fellow September 2009–August 2013 University of South Florida, Mathematics, Assistant professor; August 2013–present	
PREPRINTS	D. Khavinson, S.-Y. Lee, A. Saez, <i>Zeros of harmonic polynomials, critical lemniscates and caustics</i> , submitted S.-Y. Lee, N. Makarov, <i>Sharpness of connectivity bounds for quadrature domains</i> , arXiv preprint	
PUBLICATIONS	S.-Y. Lee, M. Yang, <i>Discontinuity in the asymptotic behavior of planar orthogonal polynomials under a perturbation of the Gaussian weight</i> , accepted in Communications in Mathematical Physics (2017) S.-Y. Lee, A. Saez, <i>A new lower bound for the maximal valence of harmonic polynomials</i> , accepted in Computational Methods and Function Theory (2016) S.-Y. Lee, R. Riser, <i>Fine asymptotic behavior in eigenvalues of random normal matrices: Ellipse Case</i> , J. Math. Phys. 57, 023302 (2016) S.-Y. Lee, N. Makarov, <i>Topology of quadrature domains</i> , J. Amer. Math. Soc. 29 (2016), 333-369 S.-Y. Lee, A. Lerario, E. Lundberg, <i>Remarks on Wilmsburst's theorem</i> , Indiana Univ. Math. J. 64 (2015), 1153-1167 F. Balogh, M. Bertola, S.-Y. Lee, K. D. T-R McLaughlin, <i>Strong asymptotics of the orthogonal polynomial with respect to a measure supported on the plane</i> , Comm. Pure Appl. Math., 68, 1, 112–172 (2015)	

- M. Bertola, R. Buckingham, S.-Y. Lee, V. U. Pierce, *Spectra of random Hermitian matrices with a small-rank external source: supercritical and subcritical regimes*, Journal of Statistical Physics, 153 4, 654-697 (2013)
- M. Bertola, R. Buckingham, S.-Y. Lee and V. Pierce, *Spectra of Random Hermitian Matrices with a Small-Rank External Source: The Critical and Near-Critical Regimes*, J. Stat. Phys., 146, 3, 475-518 (2012)
- M. Bertola, S.-Y. Lee, and M. Y. Mo, *Mesoscopic colonization of a spectral band*, J. Phys. A: Math. Theor., 42 415204 (2009)
- M. Bertola and S.-Y. Lee, *First colonization of a hard-edge in random matrix theory*, Const. Approx., 31 (2) 231-257 (2010)
- M. Bertola and S.-Y. Lee, *First colonization of a spectral outpost in random matrix theory*, Const. Approx., 30 (2) 225-263 (2009)
- S.-Y. Lee, R. Teodorescu, P. Wiegmann, *Viscous shocks in Hele-Shaw flow and Stokes phenomena of the Painlevé I transcendent*, Physica D: Nonlinear Phenomena, 240 (13) (2011) 1080-1091
- S.-Y. Lee, R. Teodorescu, P. Wiegmann, *Shocks and finite-time singularities in Hele-Shaw flow*, Physica D: Nonlinear Phenomena 238 (2009) 1113-1128
- S.-Y. Lee, *The boundary correlation function of fixed-to-free boundary-condition-changing operators in a square-lattice Ising model*, J. Stat. Mech. (2007) P10011
- S.-Y. Lee, E. Bettelheim and P. Wiegmann, *Bubble break-off in Hele-Shaw flows : Singularities and integrable structures*, Physica D 219 (2006) 22-34
- S.-Y. Lee, V. W. Scarola, J. K. Jain, *Structures for interacting composite fermions: Stripes, bubbles, and fractional quantum Hall effect*, Phys. Rev. B, 66(8) (2002) 085336
- S.-Y. Lee, V. W. Scarola, J. K. Jain, *Stripe formation in the fractional quantum Hall regime*, Phys. Rev. Lett. 87(25) (2001) 256803
- M. Boninsegni, S.-Y. Lee, V. H. Crespi, *Helium in One-Dimensional Nanopores: Free Dispersion, Localization, and Commensurate/Incommensurate Transitions with Nonrigid Orbitals*, Phys. Rev. Lett. 86(15) (2001) 3360-3363

TEACHING

- Graduate Real Analysis courses (Real Analysis II & Abstract Integrations), Fall 2015 & Spring 2016, University of South Florida
- Engineering Calculus I, Fall 2015 & Summer A 2016, University of South Florida
- Symbolic computations, Fall 2014, University of South Florida
- Introduction to Random Matrix Theory, Fall 2014, University of South Florida
- Engineering Calculus III, Fall 2013, University of South Florida
- Ma 147c, Dynamical Systems, spring 2013, Caltech

Ma 4, Introduction to Mathematical Chaos, spring 2010, 2012, 2013, Caltech
 Ma 108c, Classical Analysis (Complex analysis), spring 2010, 2011, 2012, Caltech
 Ma 192b, Topics in Riemann-Hilbert Problem, winter 2011, Caltech
 Math 204, Vectors and Matrices, spring 2009, Concordia University
 Math 201, Elementary Functions, spring 2008, Concordia University
 Lab TA and/or Recitation/grader for Electrodynamics, Modern Physics, 2004-2008, University of Chicago

SELECTED
 RECENT INVITED
 TALKS

6-11 Mar. 2016, Saas-Fee, Switzerland, *A Complex Analysis Conferece, Everything is Complex*
 26 Nov. 2015, Uppsala University (Uppsala, Sweden), *Stockholm-Uppsala Analysis and Probability Day*
 19 Jun. 2015, Simons Center of Geometric and Physics (Stony Brook, NY), *Quantum Geometry, Stochastic Geometry, Random Geometry, you name it*
 21 Apr. 2015, University of Washington (Seattle, WA), Rainwater Seminar
 1-4 Apr. 2015, University of Georgia (Athens, GA), *The Ninth IMACS International Conference on Nonlinear Evolution Equations and Wave Phenomena: Computation and Theory*
 11-16 Jan. 2015, Banff (Alberta, Canada), *Modern Applications of Complex Variables: Modeling, Theory and Computation (15W5052)*