

# Curriculum Vita

## Evguenii Rakhmanov

**Born:** July 7, 1952, in Moscow, USSR

**Address:**

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**Education:**

Doctor of Science in Physics and Mathematics, Steklov Mathematical Institute, 1983. The degree of Doctor of Science in Russia is equivalent to European degree Doctor of Science (Second Doctor)

Candidate of Science in Physics and Mathematics (Ph.D.). Steklov Math. Institute, 1977.

Postgraduate Course, Steklov Math. Institute, 1974{1977

Diploma in Mathematics (M.D.) Moscow University, 1974

Moscow University, Mechanics-Mathematics Faculty, 1969{1974

**Positions:**

Professor, University of South Florida, 1999{present

Adviser, Steklov Mathematical Institute 2000{present.

Associate Professor, University of South Florida, 1995{1999

Leading Researcher, Steklov Mathematical Institute 1989-2000.

Associate Professor, Moscow University, Mech.{Math. Faculty, 1990{1994

Assistant Professor, Moscow University, Mech. {Math. Faculty, 1988{1990

Senior Researcher, Steklov Math. Inst. 1983{1989

Junior Researcher, Steklov Math. Inst. 1977{1983

Held several short term visiting positions in universities of USA, Spain, Germany

In 1990 -1993 was appointed as a state expert in mathematics in VAC (High Attestate Commission)

### **Grants:**

NSF Grant DMS { 9501130, \Minimal Discrete Energy Problem and Approximation Theory," co-principal investigator (with E. Sa ), 1995{1997, \$171,000.

NSF Grant DMS { 9801677, \ " co-principal investigator (with E. Sa ), 1998{200,

### **Awards:**

Award for the Best Result of the Year from the Academy of Sciences of USSR for the solution of so called \1/9" problem in the Theory of Rational Approximation of Analytic Functions, (with A. A. Gonchar), 1987.

Award for the Best Result of the Year from the Steklov Mathematical Institute for theorems on Asymptotics for Orthogonal Polynomials on the Real Axis, 1982

Award for the Best Result of the Year from the Steklov Mathematical Institute



## List of Main Publications

- 1.

14. *Asymptotic Properties of Orthogonal Polynomials*, Thesis of Doctoral Dissertation, Steklov Math. Inst., Moscow, 1983 (in Russian).
15. *Equilibrium Measure and the Distribution of Zeros of Extremal Polynomials*, (with A. A. Gonchar), Mat. Sb. 125 (167) (1984, No. 1); English Translation in Math. USSR Sb. 53(1986), 119{130.
16. *On the Equilibrium Problem for the Vector Potentials*, Uspekhi Mat. Nauk **40** (1985), No. 4, (244), 155{156 (with A. Gonchar); English Translation in Russian Math. Surveys **40** 1985.
17. *On Asymptotic Properties of Orthogonal Polynomials on the Circle With Weights Not Satisfying the Szegő Condition*, Math. Sb. 130 (172) (1986), 157{169; English Translation in Math. USSR Sb. 58 (87).
18. *Equilibrium Distributions and Degree of Rational Approximation of Analytic Functions*, (with A. A. Gonchar), Mat. Sb. 134 (176) (1987); English Translation in Math. USSR Sb. 62 (1989), 305{348.
19. *Rational Approximations, Orthogonal Polynomials and Equilibrium Distributions*, (with G. Lopez), Lecture Notes In Mathematics 1329 (1988); Proceedings of Segovia (1986).
20. *On the Rate of Convergence of Padé Approximants for Orthogonal Expansions*, (with A. A. Gonchar and S. P. Suetin), Proc. of Tampa (1989) In: Progress in Approximation Theory, An International Perspective, Springer-Verlag, New York 1992.
21. *Strong Asymptotics for Orthogonal Polynomials Associated with Exponential Weight on  $\mathbb{R}$* , in "Methods of Approximation Theory in Complex Analysis and Mathematical Physics", A. A. Gonchar and E. B. Saff eds., 71{97, Moscow, "NAUKA", 1992.
22. *Variations of the equilibrium energy and the  $S$ -property of a compact of minimal capacity* 1994, manuscript (with K. Perevoznikova).

25. *Rational Approximation with Varying Weights I*, (with P. Borwein and E.B. Saff), *Constructive Approximation* 12, 223{240, 1996.
26. *Equilibrium Measure and the Distribution of Zeros of the Extremal Polynomials of a Discrete Variable*, *Math. Sb.* 187; 8 1213{1228 (1996).
27. *Zero distributions of discrete orthogonal polynomials*, *Proceedings of the VIII SPOA, Sevilla 1997, J. Comp. Appl. Math* 1997 (with A.B.J. Kuijilaars).
28. *On families of measures that are balanced in the external field on the real axis*, *Math. Sb.*, 1999, 187; 8 1213{1228 (with V. S. Buyrov) .
29. *Existence and regularity for an energy maximization problem in two dimensions*, (with S. Kamvissis), *J. Math. Phys.*, 46, no 8 (2005).
30. *Bound for polynomials with a unit discrete norm*, *Annals of Math.*,165, pp. 55 {88, 2007.
31. *On asymptotic behavior of Heine-Stieltjes and Van Vleck polynomials*, *Recent trends in orthogonal polynomials and approximation theory*, *Contemporary Mathematics*, vol 507, Amer.Math. Soc.,Providence, RI, 2010, pp.209-232 (with A. Martinez-Finkelshtein),
32. *On the convergence of Chebyshev-Pade approximations to real-valued algebraic functions*, *Arxiv: 1009.4813,2010* (with A.A. Gonchar and S.P. Suetin).
33. *Variation of the equilibrium measure and the S*

38. *Heine, Hilbert, Pade, Riemann, and Stieltjes: a John Nuttall's work 25 years later*, Contemporary Mathematics, 2012, Amer. Math. Soc., Providence, RI, vol. 578, pp. 165 - 193 (with A. Mart nez-Finkelshtein and S .Suetin),
39. *Orthogonal polynomials and S-curves*, Contemporary Mathematics, 2012, Amer. Math. Soc., Providence, RI, vol. 578, pp. 195 - 239.
40. *Phase transitions in the Hermittian matrix model and Equilibrium measure*, ( with A. Mart nezFinkelshtein and R. Orive) posted in Arxive 2013, submitted to Communications in Mathematical Physics .
41. *Asymptotic behaviour of Hermite{Pade polynomials of the 1st kind for a pair of functions making up a Nikishin system* Uspekhi Mat. Nauk, 2012, vol 67, issue 5(407) pp. 177{178 (with S. P. Suetin)
42. *Laguerre type equarion for of Hermite{Pade polynomials and application to asymptotics*

