

## Grigori Olshanski. Publications

*(unitary representations of  $p$ -adic and real reductive groups; Lie group and Lie algebra theory; unitary representations of infinite-dimensional groups; algebraic combinatorics; random point processes; infinite-dimensional Markov processes)*

1. Topology of the space of unitary representations of a nilpotent Lie group. *Funct. Anal. Appl.* 3, no. 4 (1969), 340-342.
2. On the Frobenius reciprocity theorem. *Funct. Anal. Appl.* 3, no. 4 (1969), 295-302.
3. On intertwining operators for induced representations of reductive  $p$ -adic groups. *Russian Math. Surveys* 27, no. 6 (1972), 243-244.
4. On unitary representations of the groups  $GL(2)$  and  $GU(2)$  over a totally disconnected locally compact quaternion field. *Funct. Anal. Appl.* 7, no. 1 (1973), 73-75.
5. Intertwining operators and complementary series in the class of representations of the general linear group over a locally compact division algebra induced from parabolic subgroups. *Math. USSR-Sbornik* 22 (1974), 217-255.
6. On representations of the group of automorphisms of a tree. *Uspehi Mat. Nauk.* 30, no. 3 (1975), 169-170 (Russian).
7. Classification of irreducible representations of groups of automorphisms of Bruhat-Tits trees. *Funct. Anal. Appl.* 11, no. 1 (1977), 26-34.
8. Unitary representations of the infinite-dimensional classical groups  $U(p, \infty)$ ,  $SO(p, \infty)$ ,  $Sp(p, \infty)$  and the corresponding motion groups. *Soviet Math. Doklady* 19 (1978), 220-224.
9. Unitary representations of the infinite-dimensional classical groups  $U(p, \infty)$ ,  $SO(p, \infty)$ ,  $Sp(p, \infty)$  and the corresponding motion groups. *Funct. Anal. Appl.* 12 (1979), 185-195.
10. Construction of unitary representations of infinite-dimensional classical groups. *Soviet Math. Doklady* 21 (1980), 66-70.
11. Description of unitary representations with highest weight for the groups  $U(p, q)^\sim$ . *Funct. Anal. Appl.* 14 (1981), 190-200.
12. Invariant cones in Lie algebras, Lie semigroups, and the holomorphic discrete series. *Funct. Anal. Appl.* 15 (1982), 275-285.
13. Invariant orderings in simple Lie groups: the solution to E.B. Vinberg's problem. *Funct. Anal. Appl.* 16 (1983), 80-81.
14. New "large" groups of type one. *J. Soviet Math.* 18 (1982), 22-39.
15. Convex cones in symmetric Lie algebras, Lie semigroups, and invariant causal (order) structures on pseudo-Riemannian symmetric spaces. *Soviet Math. Dokl.* 26 (1982), 97-101.
16. Complex Lie semigroups, Hardy spaces, and the Gelfand- Gindikin program. In: *Topics in group theory and homological algebra*. Yaroslavl University Press,

1982, 85-98 (Russian). English translation: *Differential Geometry and its Applications*, 1 (1991), 297-308.

17. Spherical functions and characters on the group  $U(\infty)^X$ . *Russian Math. Surveys* 37, no. 2 (1982), 233-234.

18. Unitary representations of infinite-dimensional pairs  $(G, K)$  and the formalism of R. Howe. *Soviet Math. Dokl.* 27, no. 2 (1983), 290-294.

19. Infinite-dimensional classical groups of finite  $\mathbf{R}$ -rank: description of representations and asymptotic theory. *Funct. Anal. Appl.* 18, no. 1 (1984), 22-34.

20. (with M. C. Prati) Extremal weights of finite-dimensional representations of the Lie superalgebra  $gl_{n/m}$ . *Il Nuovo Cimento* 85A, no. 1 (1985), 1-18.

21. Unitary representations of the infinite symmetric group: a semigroup approach. In: *Representations of Lie groups and Lie algebras* (A.A. Kirillov, ed.). Budapest, Akad. Kiado, 1985, 181-198.

22. Unitary representations of the group  $SO(\infty, \infty)$  as limits of unitary representations of the groups  $SO(n, \infty)$  as  $n \rightarrow \infty$ . *Funct. Anal. Appl.* 20, no. 4 (1987), 292-301.

23. Yangians and universal enveloping algebras. *Zapiski Nauchn. Semin. LOMI*, vol. 164 (1987), 142-150 (Russian); English translation: *J. Soviet Math.* 47, no. 2 (1989), 2466-2473.

24. Extension of the algebra  $U(g)$  for infinite-dimensional classical Lie algebras  $g$ , and the Yangians  $Y(gl(m))$ . *Soviet Math. Dokl.* 36, no. 3 (1988), 569-573.

25. Determinism of Lévy random fields and unitary representations of infinite-dimensional groups. *Russian Math. Surveys* 43, no. 2 (1988), 183-184.

26. Method of holomorphic extensions in the representation theory of infinite-dimensional classical groups. *Funct. Anal. Appl.* 22, no. 4 (1989), 273-285.

27. Irreducible unitary representations of the groups  $U(p, q)$  sustaining passage to the limit as  $q \rightarrow \infty$ . *Zapiski Nauchn. Semin. LOMI*, vol. 172 (1989), 114-120 (Russian); English translation: *J. Soviet Math.* 59, no. 5 (1992), 1102-1107.

28. Unitary representations of  $(G, K)$ -pairs connected with the infinite symmetric group  $S(\infty)$ . *Leningrad Math. J.* 1, no. 4 (1990), 983-1014.

29. (with M. L. Nazarov and Yu. A. Neretin) Semi-groupes engendrés par la représentation de Weil du groupe symplectique de dimension infinie. *Comptes Rendus Acad. Sci. Paris. Sér. 1*, 309, no. 7 (1989), 443-446.

30. Unitary representations of infinite-dimensional pairs  $(G, K)$  and the formalism of R. Howe. In: *Representations of Lie groups and related topics*. Advances in Contemp. Math., vol. 7 (A. M. Vershik and D. P. Zhelobenko, editors). Gordon and Breach, N.Y., London etc. 1990, 269-463.

31. Twisted Yangians and infinite-dimensional classical Lie algebras. *CWI Report*, Amsterdam, 1991; *Lecture Notes in Math.* 1510 (1992), 103-120.

32. Representations of infinite-dimensional classical groups, limits of enveloping algebras, and Yangians. In: *Topics in Representation Theory* (A. A. Kirillov, ed.). Advances in Soviet Math., vol. 2. Amer. Math. Soc., Providence, R.I., 1991, 1-66.

33. On semigroups related to infinite-dimensional groups. In: *Topics in representation theory* (A. A. Kirillov, ed.). Advances in Soviet Math., vol. 2. Amer. Math. Soc., Providence, R.I., 1991, 67-101.
34. Caractères généralisés du groupe  $U(\infty)$  et fonctions intérieures. *Comptes Rendus Acad. Sci. Paris. Sér. 1*, 313 (1991), 9–12.
35. Quantized universal enveloping superalgebra of type  $Q$  and a super-extension of the Hecke algebra. *Letters in Mathematical Physics* 24 (1992), 93-102.
36. (with S. Kerov and A. Vershik) Harmonic analysis on the infinite symmetric group. A deformation of the regular representation. *Comptes Rendus Acad. Sci. Paris. Sér. 1*, 316 (1993), 773-778.
37. Weil representation and norms of Gaussian operators. *Functional Analysis and its Applications* 28 (1994), 42–54.
38. (with Serguei Kerov) Polynomial functions on the set of Young diagrams, *Comptes Rendus Acad. Sci. Paris, Ser. I*, 319 (1994), 121–126.
39. Cauchy–Szegő kernels for Hardy spaces on simple Lie groups, *Journal of Lie Theory*, 5 (1995), 241–273.
40. (with Alexander Molev and Maxim Nazarov) Yangians and classical Lie algebras. *Russian Mathematical Surveys* 51, no. 2 (1996), 205-282.
41. (with Anatoli Vershik) Ergodic unitarily invariant measures on the space of infinite Hermitian matrices, in *Contemporary Mathematical Physics. F. A. Berezin's memorial volume*, American Mathematical Society Translations, Series 2, Vol. 175 (Advances in the Mathematical Sciences — 31), R. L. Dobrushin, R. A. Minlos, M. A. Shubin, A. M. Vershik, eds., Amer. Math. Soc., Providence, RI, 1996, pp. 137–175
42. (with Maxim Nazarov) Bethe subalgebras in twisted Yangians, *Communications in Mathematical Physics* 178 (1996), 483-506.
43. (with Yu. A. Neretin) Boundary values of holomorphic functions, special unitary representations of the groups  $O(p, q)$ , and their limits as  $q \rightarrow \infty$ . *J. Math. Sciences* 87 (1997), no. 6, 3983-4035.
44. (with Andrei Okounkov) Shifted Schur functions, *Algebra i Analiz* 9 (1997), no. 2, 73–146 (Russian); English version: *St. Petersburg Mathematical J.*, 9 (1998), 239–300.
45. Generalized symmetrization in enveloping algebras, *Transformation Groups* 2 (1997), 197–213.
46. (with Andrei Okounkov) Shifted Jack polynomials, binomial formula, and applications, *Mathematical Research Letters* 4 (1997), 69–78.
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48. (with Sergei Kerov and Andrei Okounkov) The boundary of Young graph with Jack edge multiplicities, *Intern. Mathematics Research Notices*, 1998, no. 4, 173–199.

49. (with Andrei Okounkov) Asymptotics of Jack polynomials as the number of variables goes to infinity, *Intern. Mathematics Research Notices* 1998, no. 13, 641–682.
50. (with A. Borodin) Point processes and the infinite symmetric group, *Mathematical Research Letters* 5 (1998), 799–816.
51. (with A. Borodin) Distributions on partitions, point processes, and the hypergeometric kernel, *Communications in Mathematical Physics* 211 (2000), no. 2, 335–358.
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53. (with Alexander Molev) Centralizer construction for twisted Yangians, *Selecta Mathematica* 6 (2000), no. 3, 269–317.
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55. (with A. Molev) Degenerate affine Hecke algebras and centralizer construction for the symmetric groups. *J. Algebra* 237 (2001), 302–341.
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60. (with A. Regev and A. Vershik) Frobenius–Schur functions. In: *Studies in Memory of Issai Schur* (A. Joseph, A. Melnikov, R. Rentschler, eds), *Progress in Mathematics* 210, Birkhäuser, 2003, pp. 251–300.
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62. An introduction to harmonic analysis on the infinite symmetric group. In: *Asymptotic Combinatorics with Applications to Mathematical Physics* (A. Vershik, ed.). Springer Lecture Notes in Math. 1815, 2003, 127–160.
63. The problem of harmonic analysis on the infinite-dimensional unitary group. *Journal of Functional Analysis* 205 (2003), no. 2, pp. 464–524.
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65. (with S. Kerov and A. Vershik) Harmonic analysis on the infinite symmetric group. *Inventiones Mathematicae* **158** (2004), no. 3, 551–642.
66. (with A. Borodin) Harmonic analysis on the infinite-dimensional unitary group and determinantal point processes. *Annals of Mathematics* vol. 161 (2005), no.3, 1319–1422.
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68. (with A. Borodin) Random partitions and the Gamma kernel. *Advances in Mathematics*, **194** (2005), no. 1, 141–202.
69. (with A. Borodin) Representation theory and random point processes, In: A. Laptev (ed.), *European congress of mathematics* (ECM), Stockholm, Sweden, June 27–July 2, 2004. Zürich: European Mathematical Society, 2005, pp. 73–94.
70. (with A. Borodin) Markov processes on partitions, *Probability Theory and Related Fields*, 135 (2006), no. 1, 84–152.
71. (with A. Okounkov) Limits of  $BC$ -type orthogonal polynomials as the number of variables goes to infinity, In: *Jack, Hall–Littlewood and Macdonald polynomials* (V. Kuznetsov and S. Sahi, eds.), Amer. Math. Soc., Contemporary Mathematics Series **417** (2006), 281–318.
72. (with A. Borodin) Stochastic dynamics related to Plancherel measure on partitions, In: *Representation Theory, Dynamical Systems, and Asymptotic Combinatorics* (V. Kaimanovich and A. Lodkin, eds). Amer. Math. Soc. Translations–Series 2: Advances in the Mathematical Sciences, vol. **217**, 2006, 9–21.
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79. (with A. Borodin) Infinite-dimensional diffusions as limits of random walks on partitions. *Probability Theory and Related Fields* **144** (2009), no. 1, 281–318.
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105. Markov dynamics on the dual object to the infinite-dimensional unitary group. In: *Probability and Statistical Physics in St. Petersburg. Proceedings of Symposia in Pure Mathematics* vol. 91, pp. 373–394. Amer. Math. Soc., 2016.
106. Extended Gelfand–Tsetlin graph, its  $q$ -boundary, and  $q$ -B-splines. *Functional Analysis and its Applications* 50 (2016), no. 2, 107–130.
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**Book:**

Alexei Borodin and Grigori Olshanski, Representations of the infinite symmetric group. Cambridge University Press, 2017.