

CURRICULUM VITAE

DAVID KARAKHANYAN

Official address: Theoretical Division, Yerevan Physics Institute, Alikhanian Br. str. 2, Yerevan, 375036, ARMENIA.,

Born: 22 April 1964, Yerevan, USSR

Nationality: Armenian

Marital status: Married, one daughter and one son.

Education: 2003, Doctor of Science, Yerevan Physics Institute, *Some exact results in QCD and quantum gravity.*

1991, Candidate of Science (Ph.D), Yerevan Physics Institute *The chiral fermions dynamics on two-dimensional surfaces, embedded in d-dimensional space.*

1986, Graduated from Dep. of Physics, Yerevan State University

Employment: Theory Division, Yerevan Physics Institute:

Since 2007 Leading Researcher 1999-2007 Senior Researcher
1994-1999 Researcher.
1989-1994 Junior Researcher.

Specialization: main field: Quantum Field Theory, Integrable Models
current research: Quantum Field Theory, Integrable Models

Educational activity • PhD student advise (M.Mirumyan defended PhD at 2002)

- Preparation of postgraduate courses, conferences and schools, co-supervising of PhD students within *Regional Training Network*
- Heading of educational seminar for young scientists and students in YerPhI

Publications: Number of scientific publications - 41
Number of communication to scientific meetings - 27

Received grants

- 2014 Armenian grant "Efficient scientist"
- 2013 DAAD research grant
- 2013 ANSEF grants no. 3122
- 2013 No.13-1c132 Armenian Grant
- 2010 German grant KI 623/6-1 Deutsche Forschungsgemeinschaft Grant
- 2010 No.11-1c028 Armenian Grant
- 2008 DFG grant 436 Arm 17/1/07 Deutsche Forschungsgemeinschaft
- 2007 VW grant Volkswagen Stiftung

- 2005 INTAS grant 03-51- 5460
- 2003 INTAS grant 00-390
- 2000 Collaboration grant of German Ministry BMBF
- 1999 Collaboration Grant of Saxonian Ministry of Science and Arts
- 1999 Grant of Deutsche Forschungsgemeinschaft No. Ki 623/1-2.
- 1996 INTAS grant No. 96-524
- 1994 Grant of the German Bundesministerium fur Forschung und Technologie, Federal Republic of Germany No. 211-5291 YPI
- 1994 INTAS Grant No. 93-2058

Scientific visits and collaborations

- 2015 Germany Leipzig Univ., Scientific collaboration,
- 2015 Georgia Tbilisi State Univ., participation to conference,
- 2015 Russia JINR., Scientific collaboration,
- 2015 Russia JINR., participation to conference,
- 2014 Germany Leipzig Univ., Scientific collaboration,
- 2014 Russia JINR., Scientific collaboration,
- 2013 Germany Hannover Univ., participation to conference,
- 2013 Germany Leipzig Univ., Scientific collaboration,
- 2013 Russia JINR., participation to conference,
- 2013 Georgia Tbilisi State Univ., participation to conference,
- 2012 Georgia Tbilisi State Univ., Scientific collaboration,
- 2012 Iran Tehran Inst. Adv Study, Scientific collaboration,
- 2012 Germany Hannover Univ., Scientific collaboration,
- 2011 Germany Leipzig Univ., Scientific collaboration,
- 2010 Germany Leipzig Univ., Scientific collaboration,
- 2009 Germany Leipzig Univ., Scientific collaboration,
- 2008 Germany Leipzig Univ., Scientific collaboration,
- 2007 Germany Leipzig Univ., Scientific collaboration,
- 2006 USA Arizona State Univ., Scientific collaboration,
- 2006 Germany Leipzig Univ., Scientific collaboration,
- 2006 Italy, ICTP Trieste, short term visitor,
- 2005 Germany Leipzig Univ., Scientific collaboration,
- 2004 Germany Leipzig Univ., Scientific collaboration,

- 2003 Germany Leipzig Univ., Scientific collaboration,
- 2002 Germany Leipzig Univ., Scientific collaboration,
- 2002 Italy, ICTP Trieste, short term visitor,
- 2001 Germany Leipzig Univ., Scientific collaboration,
- 2001 Germany Bonn Univ., Scientific collaboration,
- 2000 Germany Leipzig Univ., Scientific collaboration,
- 2000 Italy, Centro Volta, Collaboration Landau-Volta,
- 1999 Italy, ICTP Trieste, short term visitor,
- 1999 Germany Leipzig Univ., Scientific collaboration,
- 1998 Italy, ICTP Trieste, short term visitor,
- 1997 Germany, DAAD, Scientific collaboration,
- 1997 Italy, Centro Volta, Collaboration Landau-Volta,
- 1995 France, Saclay, scientific collaboration,
- 1995 Italy, ICTP Trieste, short term visitor,
- 1992 Ireland, Dublin Institute of Advanced Study,

List of publications

1. **“Spinor R-matrices for symplectic groups”**
A. Isaev, D. Karakhanyan, R. Kirschner
in preparation.
2. **“The structure of invariants in conformal mechanics”**
T. Hakobyan, D. Karakhanyan and O. Lechtenfeld.
Nucl. Phys. B **886**, 399 (2014) arXiv:1402.2288 [hep-th]
3. **“Zero-curvature condition in Calogero model”**
D. Karakhanyan and S. Khachatryan.
arXiv:1309.4896 [math-ph]
4. **“New solutions to the $sl_q(2)$ -invariant Yang-Baxter equations at roots of unity: Cyclic representations”**
D. Karakhanyan and S. Khachatryan.
Nucl. Phys. B **868**, 328 (2013).
5. **“Baxter operators with deformed symmetry”**
D. Chicherin, S. Derkachov, D. Karakhanyan and R. Kirschner.
Nucl. Phys. B **868**, 652 (2013) arXiv:1211.2965 [math-ph]
6. **“Baxter operators for arbitrary spin II”**
D. Chicherin, S. Derkachov, D. Karakhanyan and R. Kirschner.
Nucl. Phys. B **854**, 433 (2012); arXiv:1107.0643 [hep-th]
7. **“Baxter operators for arbitrary spin”**
D. Chicherin, S. Derkachov, D. Karakhanyan and R. Kirschner.
Nucl. Phys. B **854**, 393 (2012) arXiv:1106.4991 [hep-th]
8. **“New solutions to the $sl_q(2)$ -invariant Yang-Baxter equations at roots of unity”**
D. Karakhanyan and S. Khachatryan.
Nucl. Phys. B **850**, 522 (2011) arXiv:1012.5900 [math-ph]
9. **“Jordan-Schwinger representations and factorised Yang-Baxter operators”**
D. Karakhanyan and R. Kirschner.
SIGMA **6**, 029 (2010) arXiv:0910.5144 [hep-th]
10. **“Solutions to the Yang-Baxter equations with $osp(q)(1-2)$ symmetry: Lax operators”**
D. Karakhanyan and S. Khachatryan.
Nucl. Phys. B **808**, 525 (2009).
11. **“Iterative construction of $U(q)(sl(n+1))$ representations and Lax matrix factorisation”**
S. Derkachov, D. Karakhanyan, R. Kirschner and P. Valinevich.
Lett. Math. Phys. **85**, 221 (2008) arXiv:0805.4724 [hep-th]
12. **“Yang-Baxter R operators and parameter permutations”**
S. Derkachov, D. Karakhanyan and R. Kirschner.
Nucl. Phys. B **785**, 263 (2007) hep-th/0703076 [HEP-TH]
13. **“Baxter Q-operators of the XXZ chain and R-matrix factorization”**
S. E. Derkachov, D. Karakhanyan and R. Kirschner.
Nucl. Phys. B **738**, 368 (2006) hep-th/0511024
14. **“Polynomial realization of $sl_q(2)$ and fusion rules at exceptional values of q .”**
D. Karakhanyan, Sh. Khachatryan
Lett.Math.Phys. **72** (2005) 83-97.

15. **“Constructing representations of the non-standardly deformed algebra $sl_\xi(2)$.”**
D.Karakhanyan
Teor.Mat.Fiz. **138** (2004) 177-189.
16. **“Universal R operator with Jordanian deformation of conformal symmetry”**
S. E. Derkachov, D. Karakhanyan and R. Kirschner.
Nucl. Phys. B **681**, 295 (2004) nlin/0310019 [nlin-si]
17. **“Representation of the quantum group $Sl_q(2)$ in a space of functions.”**
D.Karakhanyan
Teor.Mat.Fiz. **134** (2003) 326-333.
18. **“Realization of the universal $sl_q(2)$ -symmetric R-operator in a function space for general and exceptional values of the deformation parameter.”**
D.Karakhanyan
Teor.Mat.Fiz. **135** (2003) 614-637.
19. **“Bjorken asymptotics of QCD and integrable systems”**
D. Karakhanyan and R. Kirschner.
In *Gurzadian, V.G. (ed.) et al.: From integrable models to gauge theories* 203-216 (2002)
20. **“Integrable XYZ model with staggered anisotropy parameter”**
D. Arnaudon, D. Karakhanyan, M. Mirumyan, A. Sedrakyan and P. Sorba.
J. Phys. A **35**, 2353 (2002) hep-th/0111233
21. **“Universal R operator with deformed conformal symmetry”**
D. Karakhanyan, R. Kirschner and M. Mirumyan.
Nucl. Phys. B **636**, 529 (2002) nlin/0111032 [nlin.SI]
22. **“Conserved currents of the three Reggeon interaction”**
D. Karakhanyan and R. Kirschner.
Phys. Atom. Nucl. **65**, 1501 (2002), [Yad. Fiz. **65**, 1539 (2002)] hep-th/9902147
23. **“Weyl anomaly in two-dimensional supergravity”**
D. R. Karakhanyan.
JETP Lett. **73**, 157 (2001), [Pisma Zh. Eksp. Teor. Fiz. **73**, 177 (2001)].
24. **“Universal R-matrix as integral operator”**
S. E. Derkachov, D. Karakhanyan and R. Kirschner.
Nucl. Phys. B **618**, 589 (2001) nlin/0102024 [nlin-si]
25. **“Fermionization of the spin S Uimin-Lai-Sutherland model: Generalization of super-symmetric t - J model to spin S”**
J. Ambjorn, D. Karakhanyan, M. Mirumyan and A. Sedrakyan.
Nucl. Phys. B **599**, 547 (2001) cond-mat/9909432
26. **“Heisenberg spin chains based on $sl(2-1)$ symmetry”**
S. E. Derkachov, D. Karakhanyan and R. Kirschner.
Nucl. Phys. B **583**, 691 (2000) nlin/0003029 [nlin-si]
27. **“High-energy scattering in gauge theories and integrable spin chains”**
D. R. Karakhanyan and R. Kirschner.
Fortsch. Phys. **48**, 139 (2000) hep-th/9902031
28. **“The effective action of W(3)-gravity”**
D. P. Karakhanyan.
J. Exp. Theor. Phys. **84**, 843 (1997), [Zh. Eksp. Teor. Fiz. **111**, 1537 (1997)].

29. **“The Nonlocal action for the induced 2-D supergravity”**
D. R. Karakhanian.
hep-th/9706136
30. **“The Covariant action for W(3) gravity”**
D. R. Karakhanian.
hep-th/9610034
31. **“Trace anomalies and cocycles of the Weyl group”**
T. Arakelian, D. R. Karakhanian, R. P. Manvelyan and R. L. Mkrtchian.
Phys. Lett. B **353**, 52 (1995).
32. **“Area preserving algebra structure of two-dimensional supergravity”**
D. R. Karakhanian.
Phys. Lett. B **365**, 56 (1996) hep-th/9506202
33. **“Trace anomalies and cocycles of Weyl and diffeomorphism groups”**
D. R. Karakhanian, R. P. Manvelyan and R. L. Mkrtchian.
Mod. Phys. Lett. A **11**, 409 (1996) hep-th/9411068
34. **“Area preserving structure of 2-d gravity”**
D. R. Karakhanian, R. P. Manvelyan and R. L. Mkrtchian.
Phys. Lett. B **329**, 185 (1994) hep-th/9401031
35. **“On Holomorphic factorization of two-dimensional gravity action”**
D. R. Karakhanian.
Phys. Atom. Nucl. **56**, 1294 (1993).
36. **“The Effective action of two-dimensional fermions in light cone gauge”**
D. R. Karakhanian.
Sov. J. Nucl. Phys. **54**, 894 (1991), [Yad. Fiz. **54**, 1466 (1991)].
37. **“Renormalization of the SL(2,R) coupling constant in 2-d gravity”**
D. Karakhanian and A. G. Sedrakian.
Phys. Lett. B **260**, 53 (1991).
38. **“Geometric And Current Algebra Structure Of Induced 2-d Gravity”**
D. R. Karakhanian and A. G. Sedrakian.
Phys. Lett. B **236**, 140 (1990).
39. **“Induced Dirac operator and smooth manifold geometry”**
D. R. Karakhanian
Preprint ERPHI-1246(32)-90.
40. **“Heterotic String Bosonization In A Space Of Arbitrary Dimension”**
D. R. Karakhanian and A. G. Sedrakian.
Preprint YERPHI-1127-4-89
41. **“Bosonization Of Heterotic String In Any Dimension”**
A. G. Sedrakian and D. R. Karakhanian.
In *Swansea 1988, Proceedings, Mathematical physics* 290-293 (1988)