

Mohammad Khorrami

address: Department of Physics, Alzahra University
Tehran 19938-91167
IRAN
email: mamwad@mailaps.org
mamwad@yahoo.com
web: <http://www.mamwad.org>

personal information

birth date: 1966/10/04
birth place: Tehran, IRAN
natinality: Iranian

education

- **BSc of electronics engineering:** October 1984–February 1989, Tehran University, Tehran, IRAN
- **MSc of physics:** February 1989–February 1991, Sharif University of Technology, Tehran, IRAN
- **PhD of physics:** February 1991–November 1993, Sharif University of Technology, Tehran, IRAN

employment

- researcher in the Institute for Studies in Theoretical Physics and Mathematics, Tehran, IRAN: November 1993–September 2001
- assistant professor in Tehran University, Tehran, IRAN: June 1994–March 1998
- assistant professor in the Institute for Advanced Studies in Basic Sciences, Zanjan, IRAN: April 1998–August 1999
- associate professor in the Institute for Advanced Studies in Basic Sciences, Zanjan, IRAN: September 1999–December 2003
- associate professor in Alzahra University, Tehran, IRAN: January 2004
- professor of physics in Alzahra University, Tehran, IRAN: February 2004

professional interests

- teaching
- research
- writing (scientific texts)

courses taught

- mathematical physics
- classical mechanics
- thermodynamics
- quantum mechanics
- electrodynamics
- statistical mechanics
- general mathematics (calculus)
- general relativity
- quantum field theory
- physical chemistry
- general physics
- classical field theory
- waves
- special relativity
- mechanics of continuous media
- electronics
- optics
- astrophysics

research topics

- general relativity
- discrete physics
- integrability and quantum groups
- two-dimensional gauge theories
- stochastic processes
- conformal and logarithmic-conformal theories
- noncommutative geometry

research papers

1. **M. Khorrami & R. Mansouri**
Spherically symmetric thin walls
Physical Review D **44**, 2 (15 July 1991) 557–559
2. **M. Khorrami & R. Mansouri**
Cylindrically symmetric thin walls in general relativity
Journal of Mathematical Physics **35**, 2 (February 1994) 951–958
3. **M. Khorrami**
Exact solution of the most general minimally coupled one dimensional lattice gauge theories
International Journal of Theoretical Physics **33**, 12 (December 1994) 2297–2316
4. **M. Khorrami, A. Shariati, M. R. Abolhassani, & A. Aghamohammadi**
A triangular deformation of the two-dimensional Poincaré algebra
Modern Physics Letters A **10**, 11 (10 April 1995) 873–883
5. **A. Aghamohammadi, M. Khorrami & A. Shariati**
Jordanian deformation of $SL(2)$ as a contraction of the Drinfeld-Jimbo deformation of $SL(2)$
Journal of Physics A **28**, 8 (21 April 1995) L225–L231
6. **M. Khorrami**
A general formulation of discrete-time quantum mechanics, restrictions on the action and the relation of unitarity to the existence theorem for initial-value problem
Annals of Physics **224**, 1 (15 November 1995) 951–958
7. **A. Shariati, A. Aghamohammadi, & M. Khorrami**
The universal R matrix for the Jordanian deformation of $sl(2)$, and the contracted forms of $so(4)$
Modern Physics Letters A **11**, 3 (30 January 1996) 187–197
8. **M. Khorrami**
Phase transition in one-dimensional lattice gauge theories
International Journal of Theoretical Physics **35**, 3 (March 1996) 557–568
9. **M. Khorrami, R. Mansouri & M. Mohazzab**
A decrumpling model of the universe
Helvetica Physica Acta **69**, 3 (November 1996) 237–240
10. **R. Mansouri & M. Khorrami**
The equivalence of Darmois-Israel- and distributional method for thin shells in general relativity
Journal of Mathematical Physics **37**, 11 (November 1996) 5672–5683

11. **A. Aghamohammadi, M. Khorrami & A. Shariati**
Toda theories as contractions of affine Toda theories
Physics Letters B **389**, 2 (12 December 1996) 260–263
12. **M. Khorrami**
Symmetries in discrete-time mechanics
Annals of Physics **252**, 2 (15 December 1996) 357–361
13. **M. Khorrami, A. Shariati & A. Aghamohammadi**
 $SL_h(2)$ -symmetric torsionless connections
Letters in Mathematical Physics **40**, 1 (April 1997) 95–99
14. **M. Alimohammadi & M. Khorrami**
 n -Point functions of two dimensional Yang-Mills theories on Riemann surfaces
International Journal of Modern Physics A **12**, 11 (30 April 1997) 1959–1965
15. **A. Aghamohammadi, M. Alimohammadi & M. Khorrami**
A pseudo-conformal representation of the Virasoro algebra
Modern Physics Letters A **12**, 18 (14 June 1997) 1349–1353
16. **M. R. Rahimi Tabar, A. Aghamohammadi & M. Khorrami**
The logarithmic conformal field theories
Nuclear Physics B **497**, 1,2 (21 June 1997) 555–566
17. **A. Shafiekhani & M. Khorrami**
Exactly and quasi-exactly solvable models on the basis of $OSp(2|1)$
Modern Physics Letters A **12**, 22 (20 July 1997) 1655–1661
18. **M. Khorrami & A. Alimohammadi**
Observables of the generalized 2-D Yang-Mills theories on arbitrary surfaces: a path integral approach
Modern Physics Letters A **12**, 30 (28 September 1997) 2265–2270
19. **A. Alimohammadi & M. Khorrami**
Greens functions of 2-dimensional Yang-Mills theories on nonorientable surfaces
Zeitschrift für Physik C **76**, 4 (December 1997) 729–731
20. **A. Alimohammadi, M. Khorrami, & A. Aghamohammadi**
Large- N limit of the generalized two-dimensional Yang-Mills theories
Nuclear Physics B **510**, 1,2 (19 January 1998) 313–323
21. **M. Khorrami, A. Aghamohammadi, & M. R. Rahimi Tabar**
Logarithmic conformal theories with continuous weights
Physics Letters B **419**, 1–4 (12 February 1998) 179–185

22. **M. Alimohammadi, V. Karimipour, & M. Khorrami**
Exact solution of a one-parameter family of asymmetric exclusion processes
Physical Review **E57**, 6 (June 1998) 6370–6376
23. **M. Khorrami, A. Aghamohammadi, & M. Alimohammadi**
Derivation of quantum theories: Symmetries and the exact solution of the derived system
International Journal of Modern Physics **A13**, 16 (30 June 1998) 2833–2840
24. **M. Khorrami, A. Aghamohammadi, & A. M. Ghezelbash**
Logarithmic $N=1$ superconformal field theories
Physics Letters **B13**, 3,4 (5 November 1998) 283–288
25. **M. Khorrami & A. Aghamohammadi**
Derivation of theories: structures of the derived system in terms of those of the original system in classical mechanics
Il Nuovo Cimento **B113**, 11 (November 1998) 1361–1371
26. **V. Karimipour & M. Khorrami**
Anisotropic Heisenberg magnet with long-range interactions. Integrability and phase structure
International Journal of Theoretical Physics **38**, 3 (March 1999) 971–984
27. **A. Aghamohammadi, M. Alimohammadi, & M. Khorrami**
Uniqueness of the minimum of the free energy of the 2-D Yang-Mills theory at large N
Modern Physics Letters **A14**, 12 (10 April 1999) 751–758
28. **A. M. Ghezelbash, M. Khorrami, & A. Aghamohammadi**
Logarithmic conformal field theories and AdS correspondence
International Journal of Modern Physics **A14**, 16 (30 June 1999) 2581–2591
29. **R. Mansouri, F. Nasser, & M. Khorrami**
Effective time variation of G in a model universe with variable space dimension
Physics Letters **A259**, 3, 4 (16 August 1999) 194–200
30. **F. Roshani & M. Khorrami**
Asymmetric one-dimensional exclusion processes: A two-parameter exactly solvable example
Physical Review **E60**, 3 (September 1999) 3393–3395
31. **A. Shariati & M. Khorrami**
Equivalence principle and radiation by a uniformly accelerated charge
Foundations of Physics Letters **12**, 5 (October 1999) 427–439

32. **M. Alimohammadi, V. Karimipour, & M. Khorrami**
A two-parametric family of exclusion processes and its exact solution
Journal of Statistical Physics **97**, 1,2 (October 1999) 373–394
33. **M. Khorrami & M. Alimohammadi**
Large-N limit of the generalized 2D Yang-Mills theory on cylinder
Nuclear Physics **B577**, 3 (26 June 2000) 609–618
34. **M. Khorrami & V. Karimipour**
Exact determination of the phase structure of a multi-species asymmetric exclusion process
Journal of Statistical Physics **100**, 5,6 (September 2000) 999–1030
35. **A. Aghamohammadi, A. H. Fatollahi, M. Khorrami & A. Shariati**
Multispecies reaction-diffusion systems
Physical Review **E62**, 4 (October 2000) 4642–4649
36. **A. Aghamohammadi & M. Khorrami**
Similarity transformation in one-dimensional reaction-diffusion systems: the voting model as an example
Journal of Physics **A33**, 44 (10 November 2000) 7843–7856
37. **K. Saaidi & M. Khorrami**
Nonlocal two-dimensional Yang-Mills- and generalized Yang-Mills-theories
International Journal of Modern Physics **A15**, 30 (10 December 2000) 4749–4760
38. **F. Kheirandish & M. Khorrami**
Logarithmic two-dimensional spin-1/3 fractional supersymmetric conformal field theories and the two-point functions
European Physical Journal **C18**, 4 (5 February 2001) 795–797
39. **M. Alimohammadi & M. Khorrami**
On the phase structure of two-dimensional generalized Yang-Mills theories
Nuclear Physics **B597**, 1–3 (12 March 2001) 652–664
40. **M. Khorrami & A. Aghamohammadi**
Phase transition in an asymmetric generalization of the zero-temperature Glauber model
Physical Review **E63**, 4 (April 2001) 042102
41. **F. Kheirandish & M. Khorrami**
Two-dimensional fractional supersymmetric conformal field theories and the two-point functions
International Journal of Modern Physics **A16**, 12 (10 May 2001) 2165–2173

42. **F. Kheirandish & M. Khorrami**
Two-dimensional fractional supersymmetric conformal- and logarithmic conformal- field theories and the two-point functions
European Physical Journal C **20**, 3 (18 May 2001) 593–597
43. **F. Roshani & M. Khorrami**
Solvable multi-species reaction-diffusion processes
Physical Review E **64**, 1 (July 2001) 011101
44. **A. Aghamohammadi & M. Khorrami**
Phase transitions in autonomous reaction-diffusion systems on a one-dimensional lattice with boundaries
Journal of Physics A **34**, 37 (21 September 2001) 7431–7439
45. **N. Majd, A. Aghamohammadi, & M. Khorrami**
Phase transition in an asymmetric generalization of the zero-temperature q -state Potts model
Physical Review E **64**, 4 (October 2001) 046105
46. **M. Alimohammadi, M. Khorrami, & A. Aghamohammadi**
Exactly solvable models through the empty interval method
Physical Review E **64**, 5 (November 2001) 056116
47. **A. Shariati, M. Khorrami, & A. Aghamohammadi**
Autonomous multispecies reaction-diffusion systems with more-than-two-site interactions
Physical Review E **64**, 6 (December 2001) 066102
48. **F. Roshani & M. Khorrami**
Annihilation-diffusion processes: an exactly solvable model
Journal of Mathematical Physics **43**, 5 (May 2002) 2627–2635
49. **K. Saaidi & M. Khorrami**
Large- N limit of the non-local Yang-Mills and generalized Yang-Mills theories on a cylinder
European Physical Journal C **23**, 4 (14 May 2002) 757–760
50. **M. Khorrami & A. Aghamohammadi**
Dynamical phase transitions of a one-dimensional kinetic Ising model with boundaries
Physical Review E **65**, 5 (May 2002) 056129
51. **M. Khorrami, A. Aghamohammadi, & M. Alimohammadi**
Exactly solvable models through the empty interval method, for more-than-two-site interactions
Journal of Physics A **36**, 2 (17 January 2003) 345–357

52. **A. Aghamohammadi, M. Alimohammadi, & M. Khorrami**
Exactly solvable models through the generalized empty interval method,
for multi-species interactions
European Physical Journal B31, 3 (13 February 2003) 371–378
53. **N. Abed-Pour, A. Aghamohammadi, M. Khorrami, & M. Reza Rahimi Tabar**
Discrete scale invariance, and its logarithmic extension
Nuclear Physics B655, 3 [FS] (14 April 2003) 342–352
54. **M. Khorrami, M. Alimohammadi, & A. Shariati**
Spin 0 and spin 1/2 quantum relativistic particles in a constant gravita-
tional field
Annals of Physics 304, 2 (April 2003) 91–102
55. **M. Khorrami & A. Aghamohammadi**
Static- and dynamical-phase transition in one-dimensional reaction-diffusion
systems with boundaries
Brazilian Journal of Physics 33, 3 (September 2003) 421–430
56. **F. Roshani & M. Khorrami**
Solvable multi-species extensions of the drop-push model
European Physical Journal B36, 1 (November 2003) 99–104
57. **F. Roshani & M. Khorrami**
Exclusion processes and boundary conditions
Modern Physics Letters B18, 1 (10 January 2004) 1–9
58. **A. Aghamohammadi & M. Khorrami**
Dynamical phase transition in the two-point functions of the autonomous
one-dimensional single-species reaction-diffusion systems
European Physical Journal B37, 2 (January 2004) 193–198
59. **A. Aghamohammadi & M. Khorrami**
Exactly solvable models through the generalized empty interval method:
multi-species and more-than-two-site interactions
International Journal of Modern Physics B18, 14 (10 June 2004) 2047–
2055
60. **M. Khorrami & A. Aghamohammadi**
Perturbative calculation of one-point functions of one-dimensional single-
species reaction-diffusion systems
Physical Review E70, 1 (July 2004) 011103
61. **M. Alimohammadi & M. Khorrami**
Large- N limit of the two-dimensional Yang-Mills theory on surfaces with
boundaries
Nuclear Physics B696, 1,2 (September 2004) 55–65

62. **F. Roshani, A. Aghamohammadi, & M. Khorrami**
 Static and dynamic phase transitions in multidimensional voting models on continua
Physical Review E **70**, 5 (November 2004) 056128
63. **F. Roshani & M. Khorrami**
 Asymmetric one-dimensional exclusion processes: a two-parameter discrete-time exactly solvable model
Journal of Physics: Condensed Matter **17**, 14 (13 April 2005) S1269–S1273
64. **F. Roshani & M. Khorrami**
 A family of discrete-time exactly-solvable exclusion processes on a one-dimensional lattice
European Physical Journal B **45**, 3 (June 2005) 399–404
65. **A. Aghamohammadi & M. Khorrami**
 Models solvable through the empty-interval method
European Physical Journal B **47**, 4 (October 2005) 583–586
66. **M. Khorrami & M. Alimohammadi**
 Large- N behavior of the Wilson loops of generalized two-dimensional Yang-Mills theories
Nuclear Physics B **733**, 1,2 (16 January 2006) 123–131
67. **M. Alimohammadi & M. Khorrami**
 Phase transitions of large- N two-dimensional Yang-Mills and generalized Yang-Mills theories in the double scaling limit
European Physical Journal C **47**, 2 (August 2006) 507–512
68. **M. Khorrami & A. Aghamohammadi**
 Phase transition in annihilation-limited processes
European Physical Journal B **56**, 3 (April 2007) 223–227
69. **L. F. Matin, A. Aghamohammadi, & M. Khorrami**
 Exactly solvable reaction diffusion models on a Cayley tree
European Physical Journal B **56**, 3 (April 2007) 243–246
70. **M. Khorrami & M. Alimohammadi**
 Non-Douglas-Kazakov phase transition of two-dimensional generalized Yang-Mills theories
European Physical Journal C **51**, 1 (June 2007) 193–197
71. **A. H. Fatollahi & M. Khorrami**
 Field theories on spaces with linear fuzziness
Europhysics Letters **80**, 2 (October 2007) 20003
72. **A. Shariati, M. Khorrami, & A. H. Fatollahi**
 TeV-photon paradox and space with SU(2) fuzziness
Europhysics Letters **81**, 4 (February 2008) 40003

73. **H. Komaie-Moghaddam, A. H. Fatollahi, & M. Khorrami**
Field theory amplitudes in a space with $SU(2)$ fuzziness
European Physical Journal C **53**, 4 (February 2008) 679–688
74. **H. Komaie-Moghaddam, M. Khorrami, & A. H. Fatollahi**
Loop diagrams in space with $SU(2)$ fuzziness
Physics Letters B **661**, 2–3 (20 March 2008) 226–232
75. **A. Aghamohammadi & M. Khorrami**
The Fokker-Planck equation, and stationary densities
International Journal of Theoretical Physics **47**, 6 (June 2008) 1630–1638
76. **L. Lavaei-Yanesi & M. Khorrami**
Phase structure of the quartic-cubic generalized two dimensional Yang Mills $U(N)$ on the sphere
Journal of Mathematical Physics **49**, 7 (July 2008) 073514
77. **A. H. Fatollahi, A. Shariati, & M. Khorrami**
Quantum mechanics on space with $SU(2)$ fuzziness
European Physical Journal C **60**, 3 (April 2009) 489–494
78. **M. Khorrami, A. H. Fatollahi, & A. Shariati**
Poisson structure on a space with linear $SU(2)$ fuzziness
Journal of Mathematical Physics **50**, 7 (July 2009) 072902
79. **A. Aghamohammadi & M. Khorrami**
Nonuniform autonomous one-dimensional exclusion nearest-neighbor reaction-diffusion models
European Physical Journal B **74**, 2 (March 2010) 159–164;
DOI: 10.1140/epjb/e2010-00061-2
80. **A. Shariati, M. Khorrami, & A. H. Fatollahi**
Statistical mechanics of free particles on space with Lie type noncommutativity
Journal of Physics A **43**, 28 (16 July 2010) 285001;
DOI: 10.1088/1751-8113/43/28/285001
81. **M. Khorrami & A. Aghamohammadi**
Dynamical phase transition in one-dimensional kinetic Ising model with nonuniform coupling constants
Journal of Statistical Mechanics: Theory and Experiment (October 2010) P10019;
DOI: 10.1088/1742-5468/2010/10/P10019
82. **L. Ramezan & M. Khorrami**
Spin 0 and spin 1/2 particles in a spherically symmetric static gravity and a Coulomb field
International Journal of Theoretical Physics **49**, 11 (November 2010) 2918–2928;
DOI: 10.1007/s10773-010-0484-1

83. **Amir H. Fatollahi, Mohammad Khorrami, Ahmad Shariati, & Amir Aghamohammadi**
Classification of matrix-product ground states corresponding to one-dimensional chains of two-state sites of nearest neighbor interactions
Physical Review A **83**, 4 (April 2011) 042108;
DOI: 10.1103/PhysRevA.83.042108
84. **Amir Aghamohammadi & Mohammad Khorrami**
Nonuniform autonomous one-dimensional exclusion nearest-neighbor reaction-diffusion models
Journal of Physical A **44**, 34 (28 August 2011) 345002;
DOI: 10.1088/1751-8113/44/34/345002
85. **Mohammad Khorrami, Ahmad Shariati, Amir Aghamohammadi, & Amir H. Fatollahi**
Lack of anomalous diffusion in linear translationally-invariant systems determined by only one initial condition
Physical Letters A **376**, 5 (16 January 2012) 687–691;
DOI: 10.1016/j.physleta.2011.10.076
86. **Amir Aghamohammadi, Cina Aghamohammadi, & Mohammad Khorrami**
Externally driven one-dimensional Ising model
Journal of Statistical Mechanics: Theory and Experiment (February 2012) P02004;
DOI: 10.1088/1742-5468/2012/02/P02004