CURRICULUM VITAE

Neda Sadooghi

Department of Physics

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POSITION Sharif University of Technology, Tehran, Iran

11/2013 - Present Professor, Department of Physics

11/2007 - 11/2013 Associate Professor, Department of Physics

01/2006 - 11/2007 Assistant Professor, Permanent Position (tenured)

09/2000 - 01/2006 Assistant Professor, Department of Physics

09/1999 - 09/2000 Lecturer, Department of Physics

Institute for Theoretical Physics and Mathematics (IPM), Tehran, Iran

01/2006 - 01/2007 Nonresident Research Fellow, School of Physics 04/1999 - 12/2005 Resident Research Assistant, School of Physics

Université Louis Pasteur, Strasbourg, France

02/1998 - 03/1999 Postgraduate Researcher, Laboratoire de Physique

Théorique

Advisor: Prof. Janos Polonyi

EDUCATION Ruprecht-Karls University, Heidelberg, Germany

02/1998 PhD in Physics

Supervisor: Prof. Heinz J. Rothe

09/1993 MSc in Physics

Supervisor: Prof. Heinz J. Rothe

06/1987 German universities entrance qualification exam

Final exam at ``Studienkolleg''

High-School, Tehran, Iran

06/1985 High School Diploma

EXECUTIVE Department of Physics, Sharif University of Technology, Tehran, Iran

POSITIONS 01/2022 – present Department Chair

09/2017 – 09/2020 Vice-Chair in Graduate Studies' Affairs, Department of

Physics

07/2012 – 10/2014 Vice-Chair of Education, Department of Physics

08/2009 – 08/2020 Member of Exceptional Talent Council

09/2006 – 09/2008 Vice-Chair in Graduate Studies' Affairs, Department of

Physics

09/2005 – 09/2006 Vice-Chair of Education, Department of Physics

TEACHING Department of Physics, Sharif University of Technology, Tehran, Iran

P= PhD, M=MSc, U=Undergraduate, S=Spring Semester, FS=Fall Semester

FS 2003, 2005, 2008, 2011, 2013; Quantum Field Theory I [P]

SS 2016, 2018, 2020, 2022, 2024, 2025

SS 2004, 2006, 2009, 2012, 2014; Quantum Field Theory II [P]

FS 2016, 2018, 2020, 2022, 2024, 2025

FS 2004, 2006, 2009, 2012, 2014; Quantum Field Theory III [P]

SS 2017, 2019, 2021

EXPERIENCE

SS 2007 Quantum Chromodynamics [P]

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	SS 2000 2001	1, 2005, 2008, 2009,2023;	Classical Mechanic	s [M]		
	FS 2003	1, 2003, 2008, 2009,2023,	Classical iviectiallic	s [ivi]		
			Mathematical Phys	sics [M]		
	•		Thermal Field The			
	SS 2011. 2015	5, 2016, 2019, 2023	Elementary Particl	e Physics [M+U]		
	FS 2002, 2006	5	Analytical Mechan	ics I [U]		
	SS 2003, 2007	7	Analytical Mechan	ics II [U]		
	FS 2001, 2002	2; SS 2005, 2021	Quantum Mechani	ics I [U]		
		3; FS 2005, 2021	Quantum Mechani			
	FS 2017, 2018	3, 2019, 2022	Quantum Mechnic			
	SS 2002		Mathematical Phys			
CURARAED	FS 2024		General Physics I	[U]		
SUMMER SCHOOL	Summer School on Phenomenology Aspects of Elementary Particle Physics, 09/2005					
LECTURES	Tehran-Iran (2 lectures)					
RESEARCH INTERESTS	Thermal Field Theory, QCD under Extreme Conditions, Noncommutative Field Theory					
VISITS	07/2019	Dont of Theoretical Physics Mur	aich University of To	chnology Cormany		
VISITS	07/2018 Dept. of Theoretical Physics, Munich University of Technology, Germany 08/2012 Dept. of Theoretical Physics, CERN, Geneva, Switzerland					
	06/2012	Dept. of Theoretical Physics, Goe				
	07/2009	Dept. of Theoretical Physics, Mur	•	•		
	07/2009	Dept. of Theoretical Physics, Univ	•			
	02/2009	Dept. of Theoretical Physics, Mur		•		
	07/2007	Dept. of Theoretical Physics, Univ	· · · · · · · · · · · · · · · · · · ·			
	07/2007	Dept. of Theoretical Physics, Hum	nboldt University, Be	erlin, Germany		
	09/2003	Dept. of Theoretical Physics, Uni	versity of Heidelber	g, Germany		
	09/2003	Dept. of Theoretical Physics, Hum	nboldt University, Be	erlin, Germany		
	04/2002	Dept. of Theoretical Physics, CERI		and		
	CERN= The Eu	ıropean Organization for Nuclear R	esearch			
SABBATICAL	Munich University of Technology (TUM), Munich, Germany					
LEAVE	09/2010 – 01/2011 Institute for Theoretical Physics (Chair: Prof. Nora Brambilla)					
POST-	Dr. Sh. Fayazbakhsh			09/2011 - 01/2015		
DOCTORAL RESEARCH	School of particles and accelerators (IPM), Tehran, Iran					
FELLOW						
	Dr. M. Kiama	a lasa	09/2020 - present			
	School of par	ticles and accelerators (IPM), Tehra	an, iran			
PhD STUDENTS	Department of Physics. Sharif University of Technology, Tehran, Iran					
SUPERVISION	[07]	Dr. E. Siri, "Relativistic bosons in		2020 - 2025		
		medium: Thermodynamic instabil	lities and Bose-			
	[06]	Einstein condensation"	at of	2016 2020		
	[06]	Dr. S.M.A. Tabatabaee , "The effe	•	2016 - 2020		
		magnetization on the evolution og quarks and gluons"	ין נווב טומגוווט טן			
	[05]	Dr. M. Shokri on "Evolution of	of electromaanetic	2015 - 2019		
	[00]	fields in a plasma of quarks and g				
		, , , , , , , , , , , , , , , , , , ,	•			

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	[04]	temperature and background magnetic fields on the	2012 - 2017		
		observables of heavy ion collisions"			
	[03]	Dr. Sh. Fayazbakhsh on ``Effect of external magnetic	2007 - 2011		
		fields on 2SC color-superconductivity"			
	[02]	Dr. A. A. Varshovi on ``Noncommutative anomaly''	2008 - 2011		
	[02]	(Co-Advisor: F. Ardalan)	2000 2011		
	[01]	Dr. M. Ghasemkhani on ``Noncommutative gauge	2006 - 2010		
	[]	theory in two dimensions" (Co-Advisor: F. Ardalan)			
CURRENT PhD	[01]	M. Abedlou Ahadi "Transport phenomena in QGP"	2025 - presen		
STUDENTS	[02]	H. Mortazavi "QCD Phase transition"	2025 - presen		
MSc STUDENTS	Department o	of Physics, Sharif University of Technology, Tehran, Ira	ın		
SUPERVISION	[01]	M. Mohammadi Najafabadi	2002		
	[02]	M. Soroush	2002		
	[03]		2005		
	[04]		2006		
	[05]		2006		
	[06]		2007		
			2007		
	[07]				
	[80]		2009		
	[09]	-	2011		
	[10]	-	2011		
	[11]	_	2012		
	[12]	O. Hajizadeh (Co-Advising with Sh. Rouhani)	2012		
	[13]	B. Salehi Kasmaei	2012		
	[14]	S.M.A. Tabatabaee	2013		
	[15]	A. Jalooli	2014		
	[16]	A. Jamshidi	2019		
	[17]	Y. Hosseini	2019		
	[18]	A. Hosseinzadeh	2019		
	[19]	M. H. Gholami	2020		
	[20]	M. Rahbardar Mojaver	2021		
	[21]	H. Mortazavi Ghalati	2022		
	[22]	M. Sedighi Jafari	2023		
	[23]	M. Sh. Sadeghi	2024		
	[24]	B. Karami	2024		
	[25]	M. Abedlou Ahadi	2025		
CURRENT MSc STUDENTS	Department of Physics, Sharif University of Technology, Tehran, Iran				
	[01]	M. R. Shokouhi (2025)			
	[02]	A. Poursohi (2025)			
THESES	Ruprecht-Karls University, Heidelberg, Germany				
	One-loop perturbative study of the continuum behavior of fermionic 1994 - 1998				
	formulations of lattice QED using the small-a expansion (PhD thesis,				
	in German)				
	Staggered fermions in U(1) lattice gauge theory with finite chemical 1992 - 1993				
	potential (Master thesis, in German)				

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- [40] M. Abedlou Ahadi and **Néda Sadooghi,** Chiral vortical conductivities and the moment of inertia of a rigidly rotating Fermi gas, Phys. Rev. **D111** (2025) 116011
- [39] E. Siri and **Néda Sadooghi**, *Bose-Einstein condensation in a rigidly rotating relativistic boson gas*, Phys. Rev. **D111** (2025) 036011
- [38] E. Siri and **Néda Sadooghi**, *Boson propagator under rigid rotation*, Trans. Theor. Math. Phys. **1** (2024) 105
- [37] E. Siri and **Néda Sadooghi,** *Thermodynamic properties of a relativistic Bose gas under rigid rotation*, Phys. Rev. **D110** (2024) 036016
- [36] M. Kiamari, **Néda Sadooghi**, and M. Sedighi Jafari, *Relativistic magnetohydro-dynamics of a spinful and vertical fluid: Entropy current analysis*, Phys. Rev. **D109** (2024) 036024
- [35] H. Mortazavi Ghalati and **Néda Sadooghi,** *Magnetic dual chiral density* wave in a rotating cold quark matter, Phys. Rev. D108 (2023) 054032
- [34] **Néda Sadooghi,** S.M.A. Tabatabaee, and F. Taghinavaz, *Inverse magnetorotational catalysis and the phase diagram of a rotating hot and magnetized quark matter,* Phys. Rev. **D104** (2021) 116022
- [33] M. Kiamari, M. Rahbardar, M. Shokri, and Néda Sadooghi, Anomalous Hall instability in the Chern-Simons magnetohydrodynamics, Phys. Rev. D104 (2021) 076023
- [32] S.M.A. Tabatabaee and **Néda Sadooghi**, Wigner function formalism and the evolution of thermodynamic quantities in an expanding magnetized plasma, Phys. Rev. **D101** (2020) 076022
- [31] **Néda Sadooghi** and S.M.A. Tabatabaee, *Paramagnetic sqeezing of a uniformly expanding quark gluon plasma in and out of equilibrium*, Phys. Rev. **D99** (2019) 056021
- [30] M. Shokri and **Néda Sadooghi**, Evolution of magnetic fields from the 3+1 dimensional self-similar and Gubser flows in ideal relativistic magneto-hydrodynamics, JHEP **1811** (2018) 181
- [29] **Néda Sadooghi** and M. Shokri, *Rotating solutions of nonideal transverse Chern-Simons magnetohydrodynamics and the anomalous Hall current,* Phys. Rev. **D98** (2018) 076011
- [28] M. Shokri and **Néda Sadooghi**, Novel self-similar rotating solutions of non-ideal transverse magnetohydrodynamics, Phys. Rev. **D96** (2017) 116008
- [27] **Néda Sadooghi** and S.M.A. Tabatabaee, The effect of magnetization and electric polarization on the anomalous transport coefficients of a chiral fluid, New J. Phys. **19** (2017) 053014
- [26] **Néda Sadooghi** and F. Taghinavaz, Dilepton production rates in a hot and magnetized quark-gluon plasma, Annals of Physics **376** (2017) 218
- [25] **Néda Sadooghi** and F. Taghinavaz, Magnetized plasminos in cold and hot QED plasmas, Phys. Rev. **D92** (2015) 025006
- [24] Sh. Fayazbakhsh and **Néda Sadooghi**, Anomalous magnetic moment of hot quarks, inverse magnetic catalysis and reentrance of the chiral symmetry broken phase, Phys. Rev. **D90** (2014) 105030
- [23] Néda Sadooghi and F. Taghinavaz, Contribution of plasminos to the shear viscosity of a hot and dense Yukawa-Fermi gas, Phys. Rev. D89 (2014) 125005

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- [22] Sh. Fayazbakhsh and **Néda Sadooghi,** Weak decay constant of neutral pions in a hot and magnetized guark matter, Phys. Rev. **D88** (2013) 065030
- [21] F. Ardalan, H. Arfaei, M. Ghasemkhani and **Néda Sadooghi,** *Gauge invariant cutoff QED*, Phys. Scripta (2013) 035101
- [20] Sh. Fayazbakhsh, S. Sadeghian and **Néda Sadooghi**, *Properties of neutral mesons in a hot and magnetized quark matter*, Phys. Rev. **D86** (2012) 085042
- [19] **Néda Sadooghi** and F. Taghinavaz, Local electric current correlation function in exponentially decaying magnetic fields, Phys. Rev. **D85** (2012) 125035
- [18] F. Ardalan, M. Ghasemkhani and **Néda Sadooghi**, *On the mass spectrum of noncommutative Schwinger model in Euclidean R*² *space*, Eur. Phys. J. **C71** (2011) 1606
- [17] Sh. Fayazbakhsh and **Néda Sadooghi**, *Phase diagram of hot magnetized two-flavor superconducting quark matter*, Phys. Rev. **D83** (2011) 025026
- [16] F. Ardalan and **Néda Sadooghi**, *Translational-invariant noncommutative gauge theory*, Phys. Rev. **D83**, (2011) 025014
- [15] Sh. Fayazbakhsh and **Néda Sadooghi**, Color neutral 2SC phase of cold and dense quark matter in the presence of constant magnetic fields, Phys. Rev. **D82** (2010) 045010
- [14] M. Ghasemkhani and Néda Sadooghi, Perturbative quantization of twodimensional space-time noncommutative QED, Phys. Rev. D81 (2010) 045014
- [13] **Néda Sadooghi** and K. Sohrabi Anaraki, *Improved ring potential of QED at finite temperature and in the presence of weak and strong magnetic fields*, Phys. Rev. **D78** (2008) 125019
- [12] **Néda Sadooghi** and A. Sodeiri Jalili, *New look at the modified Coulomb potential in a strong magnetic field*, Phys. Rev. **D76** (2007) 065013
- [11] **Néda Sadooghi** and A. Jafari Salim, *Axial anomaly of QED in a strong magnetic field and noncommutative anomaly,* Phys.Rev. **D74** (2006) 085032
- [10] A. Jafari Salim and **Néda Sadooghi**, Dynamics of O(N) model in a strong magnetic background field as a modified noncommutative Field Theory, Phys. Rev. **D73** (2006) 065023
- [09] F. Ardalan, H. Arfaei and **Néda Sadooghi**, *On the anomalies and Schwinger terms in noncommuative gauge theories*, Int. J. Mod. Phys. **A21** (2006) 4161
- [08] F. Ardalan and **Néda Sadooghi**, *Planar and nonplanar Konishi anomalies* and exact Wilsonian effective superpotential for noncommutative N=1 super-symmetric U(1), Int. J. Mod. Phys. **A20** (2005) 2859
- [07] M. Alishahiha, A. Ghodsi and **Néda Sadooghi**, One-loop perturbative corrections to non-anti-commutativity parameter of N=1/2 supersymmetric U(N) gauge theory, Nucl. Phys. **B691** (2004) 111
- [06] **Néda Sadooghi** and M. Mohammadi, *On the β-function and conformal anomaly of noncommutative QED with adjoint matter fields*, Int. J. Mod. Phys. **A18** (2003) 2591
- [05] **Néda Sadooghi** and M. Soroush, *Noncommutative dipole QED,* Int. J. Mod. Phys. **A18** (2003) 97
- [04] F. Ardalan and **Néda Sadooghi,** *Anomaly and nonplanar diagrams in noncommutative gauge theories,* Int. J. Mod. Phys. **A17** (2002) 123

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- [03] F. Ardalan and **Néda Sadooghi**, *Axial anomaly in noncommutative QED on* R^4 , Int. J Mod. Phys. **A16** (2001) 3151
- [02] H. J. Rothe and **Néda Sadooghi**, *A new look at the axial anomaly in lattice QED with Wilson fermions*, Phys. Rev. **D58** (1998) 074502
- [01] **Néda Sadooghi** and H. J. Rothe, *Continuum behavior of lattice QED, discretized with one-sided lattice differences, in one-loop order*, Phys. Rev. **D55** (1997) 6749

> Preprint

- [1] **Néda Sadooghi**, Chiral MHD description of a non-dissipative magnetized QGP fluid using the effective NJL model in a strong magnetic field, arXiv: 0905.2097
- [2] M. Kiamari and **Néda Sadooghi**, Wigner function of a rigidly rotating and magnetized QED plasma, arXiv: 2509.03440
- [3] E. Siri and **Néda Sadooghi,** Spontaneous breaking of global U(1) symmetry in an interacting Bose gas under rigid rotation, arXiv:2508.17055

Works in Progress

- [1] Thermodynamics of a rotating Bose gas, with E. Siri
- [2] Thermodynamics of rotating Fermi gas, with M. Abedlou Ahadi

> Papers in Conference Proceedings

- [1] Sh. Fayazbakhsh and **Néda Sadooghi**, *Two-flavor color superconductivity* at finite temperature, chemical potential and in the presence of strong magnetic field, arXiv: 1302.0622, Quark Confinement and the Hadron Spectrum X, October 8-12, Munich, Germany
- [2] **Néda Sadooghi**, *Modified Coulomb potential of QED in a strong magnetic field*, PoS (LATTICE 2007) 082, Talk presented in XXV International Symposium on Lattice Field Theory, July 30-August 4, 2007, Regensburg, Germany
- [3] F. Ardalan and **Néda Sadooghi**, Exact Wilsonian superpotential for noncommutative N=1 supersymmetric U(1): Talk presented by N. Sadooghi in *Teheran 2004, Mathematical Physics*, 162-165
- [4] **Néda Sadooghi** and F. Taghinavaz, *Contribution of plasminos to the shear viscosity of a hot and dense Yukawa-Fermi gas*, Poster presented by F. Taghinavaz in XIth Quark Confinement and the Hadron Spectrum", Saint-Petersburg, Russia, 8-12 September 2014
- [5] M. Shokri and Néda Sadooghi, Talk presented by M. Shokri in XIIth Quark Confinement and the Hadron Spectrum", Maynooth, Ireland, 31 July - 6 August 2018, to be published in PoS (2019)
- [6] S.M.A. Tabatabaee and **Néda Sadooghi**, Poster presented by S.M.A. Tabatabaee in XIIth Quark Confinement and the Hadron Spectrum", Maynooth, Ireland, 31 July 6 August 2018, to be published in PoS (2019)

> Edited Books

Mathematical Physics: Proceedings of XI Regional Conference

Tehran-Iran, May 3-6, 2004

Editors: S. Rahvar, F. Shojaei and Néda Sadooghi, World Scientific Publishing Co. 2005

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CONFERENCES, WORKSHOPS, AND WEEKLY SEMINARS

Presentation in International, Regional and National Conferences

01/2018 IPM Workshop on collective phenomena and heavy ion physics, IPM, Iran 09/2015 Annual conference, Physical Society of Iran, Mashhad, Iran 10/2014 Workshop on QCD and QED, IPM, Tehran, Iran 05/2014 Quark Matter 2014, Darmstadt, Germany (Poster) 04/2014 Third School and Workshop on AdS/CFT and its Applications, Tehran, Iran 05/2013 Second School and Workshop on AdS/CFT, Tehran, Iran 07/2009 Mideast 2009, Fifth Regional Meeting on String Theory, Crete, Greece 02/2009 47th Winter School on Theoretical Physics, Schladming, Austria (Poster) 06/2008 PASCOS 2008, Waterloo, Canada LATTICE 2007 Regensburg, Germany 08/2007 07/2007 Mideast 2007, Fourth Regional Meeting on String Theory, Patras, Greece 05/2006 IPM School and Conference on Lepton and Hadron Physics, Tehran, Iran 04/2006 ISS 2006, Intl. School and Workshop on String Theory, Tehran, Iran 09/2005 NCG 2005, Intl. Workshop on Noncommutative Geometry, Tehran, Iran 07/2005 Mideast 2005, Third Regional Meeting on String Theory, Crete, Greece 06/2005 Spring Conference on Theoretical Physics, IPM, Tehran, Iran 01/2005 ISS 2005, Intl. School and Workshop on String Theory, Qeshm, Iran 06/2004 Spring Conference on Theoretical Physics, IPM, Tehran, Iran 11th Regional Meeting on Mathematical Physics, Tehran, Iran 05/2004 10/2003 ISS 2003, Intl. School and Workshop on String Theory, Anzali, Iran 06/2003 Spring Conference on Theoretical Physics, IPM, Tehran, Iran 06/2002 Spring Conference on Theoretical Physics, IPM, Tehran, Iran 05/2002 ISS 2002, Intl. School and Workshop on String Theory, Shiraz, Iran 09/2001 School on Logarithmic Conformal Field Theory, Tehran, Iran 06/2001 Spring Conference on Theoretical Physics, IPM, Tehran, Iran Mideast 2001, First Regional Meeting on String Theory, Crete, Greece 06/2001 06/2000 Spring Conference on Theoretical Physics, IPM, Tehran, Iran 05/2000 ISS 2000, Intl. School and Workshop on String Theory, Isfahan, Iran 06/1999 Spring Conference on Theoretical Physics, IPM, Tehran, Iran

Speaker at Weekly Seminars

07/2018 Dept. of Theoretical Physics, Munich University of Technology, Germany 07/2012 Dept. of Theoretical Physics, University of Heidelberg, Germany 07/2012 Dept. of Theoretical Physics, Goethe University, Frankfurt, Germany 11/2010 Dept. of Theoretical Physics, Munich University of Technology, Germany 07/2009 Dept. of Theoretical Physics, Munich University of Technology, Germany 07/2009 Dept. of Theoretical Physics, University of Heidelberg, Germany 02/2009 Dept. of Theoretical Physics, Munich University of Technology, Germany 07/2007 Dept. of Theoretical Physics, University of Heidelberg, Germany 07/2007 Dept. of Theoretical Physics, Humboldt University, Berlin, Germany Dept. of Theoretical Physics, University of Heidelberg, Germany 09/2003 09/2003 Dept. of Theoretical Physics, Humboldt University, Berlin, Germany 04/2002 Dept. of Theoretical Physics, CERN, Geneva, Switzerland

> Conference and Workshop Participations

07/2005	Post-Conference, Strings at CERN, Geneva, Switzerland
06/2004	Strings 2004, Paris, France
01/2001	Strings 2001, Mumbai, India
04/2002	Spring School on Superstring and Related Matter, Trieste, Italy
04/2001	Spring School on Superstring and Related Matter, Trieste, Italy

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Germany **FELLOWSHIPS** Ruprecht-Karls University, Heidelberg, Germany PhD Fellowship, German Research Council (DFG) 1994-1998 **HONORS** > Sharif University of Technology, Tehran, Iran Distinguished lecturer, Department of Physics 2013 **MEMBER IN** > Conferences and Workshops **ORGANIZATION** Mini-Workshop on Particle Physics, Higgs Day, October 7, 2012, 10/2012 **COMMITTEES** Department of Physics, Sharif University of Technology, Tehran, Iran XI Regional Conference in Mathematical Physics, May 3-5, 2004, Tehran, 05/2004 Iran > Colloquia Physics Department Colloquia, Department of Physics 2007-2020 Sharif University of Technology, Tehran, Iran REFEREE Physical Review D, American Physical Society (APS) **SERVICES** Physical Society of Iran (PSI)

English, German, French, and Persian (native)

LANGUAGES

04/2000 Spring School on Superstring and Related Matter, Trieste, Italy

07/1998 International Conference; QCD at finite baryon density, Bielefeld,

September 2025 Tehran, Iran

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