

# Curriculum vitae

Tamás F. Görbe  
(October 31, 2017 at Szeged, Hungary)

---

## CONTACT

Address	Department of Theoretical Physics University of Szeged TISZA L. KRT. 84-86. SZEGED, HUNGARY, H-6720	Phone	+36 62 544 809
		E-mail	tfgorbe@physx.u-szeged.hu
		Skype	tfgorbe
		arXiv	<a href="https://arxiv.org/a/gorbe_t_1">arxiv.org/a/gorbe_t_1</a>

## EMPLOYMENT

2017- **Research Fellow**  
Department of Theoretical Physics, University of Szeged

2016-2017 **Predoctoral Research Fellow**  
Department of Theoretical Physics, University of Szeged

## EDUCATION

2013-2016 **PhD in Mathematical Physics, University of Szeged**  
Thesis: Integrable many-body systems of Calogero-Ruijsenaars type  
Supervisor: László Fehér

2011-2013 **MSc in Applied Mathematics, University of Szeged**  
Thesis: Group-theoretic treatment of integrable systems

2007-2010 **BSc in Mathematics, University of Szeged**  
Thesis: Lie groups and related algebraic structures

## RESEARCH INTERESTS

Mathematical Physics; Integrable Systems

## RESEARCH PROJECTS

2014-2018 Group-theoretic aspects of integrable systems and their dualities, Participant  
PI: László Fehér, Hungarian Scientific Research Fund (OTKA), K-111697

2014-2018 Quantum structure of spacetime (COST Action MP1405 QSPACE), Participant  
Chair: Richard Szabo, European Cooperation in Science and Technology

2009-2013 Integrable many-body and field theoretic models, Student participant  
PI: László Fehér, Hungarian Scientific Research Fund (OTKA), K-77400

## REFEREE & REVIEWER

Journal of Nonlinear Mathematical Physics • Letters in Mathematical Physics • Symmetry,  
Integrability and Geometry: Methods and Applications (SIGMA) • Mathematical Reviews •  
Zentralblatt MATH

## SCIENTIFIC SOCIETIES

János Bolyai Mathematical Society • Roland Eötvös Physical Society

## HONOURS & AWARDS & FELLOWSHIPS

- 2017 50 Talented Young Hungarians, La femme magazine (Hungary)
- 2016-2017 Predoctoral Fellowship, New National Excellence Program  
Ministry of Human Capacities, Hungary
- 2016-2017 Junior Templeton Fellow, Hungarian Templeton Program
- 2016 List of Excellence – Silver degree among grad students, University of Szeged
- 2015 3<sup>rd</sup> prize, Scientific Competition, Hungarian Academy of Sciences,  
Regional Committee in Szeged  
List of Excellence – Bronze degree among grad students, University of Szeged
- 2013 Loránd Eötvös Scholarship for masters students, National Excellence Program  
Excellent Student of Faculty, Univ. of Szeged, Faculty of Science and Informatics  
XXXI. National Scientific Students' Associations Conference, Budapest, Hungary
- 2012 1<sup>st</sup> prize, Scientific Students' Associations Conference, Szeged, Hungary

## RESEARCH & PUBLICATIONS

### Research papers

- [10] T.F. Görbe, M.A. Hallnäs, *Quantisation of compact forms of the trigonometric Ruijsenaars-Schneider system*, preprint (2017); [arXiv:1707.08483 \[math-ph\]](#)
- [9] L. Fehér, T.F. Görbe, *Trigonometric and elliptic Ruijsenaars–Schneider systems on the complex projective space*, Lett. Math. Phys. **106** (2016) 1429-1449; [doi: 10.1007/s11005-016-0877-z](#); [arXiv:1605.09736 \[math-ph\]](#)
- [8] B.G. Pusztai, T.F. Görbe, *Lax representation of the hyperbolic van Diejen dynamics with two coupling parameters*, Commun. Math. Phys. **354** (2017) 829-864; [doi: 10.1007/s00220-017-2935-5](#); [arXiv:1603.06710 \[math-ph\]](#)
- [7] L. Fehér and T.F. Görbe, *The full phase space of a model in the Calogero-Ruijsenaars family*, J. Geom. Phys. **115** (2017) 139-149; [doi: 10.1016/j.geomphys.2016.04.018](#); [arXiv:1603.02877 \[math-ph\]](#)
- [6] T.F. Görbe, *A simple proof of Sklyanin's formula for the canonical spectral coordinates of the rational Calogero-Moser system*, SIGMA **12** (2016) 027; [doi: 10.3842/SIGMA.2016.027](#); [arXiv:1601.01181 \[math-ph\]](#)
- [5] L. Fehér and T.F. Görbe, *On a Poisson-Lie deformation of the  $BC_n$  Sutherland system*, Nucl. Phys. B **901** (2015) 85-114; [doi: 10.1016/j.nuclphysb.2015.10.008](#); [arXiv:1508.04991 \[math-ph\]](#)
- [4] T.F. Görbe and L. Fehér, *Equivalence of two sets of Hamiltonians associated with the rational  $BC_n$  Ruijsenaars-Schneider-van Diejen system*, Phys. Lett. A **379** (2015) 2685-2689; [doi: 10.1016/j.physleta.2015.08.014](#); [arXiv:1503.01303 \[math-ph\]](#)

- [3] T.F. Görbe, *On the derivation of Darboux form for the action-angle dual of trigonometric  $BC_n$  Sutherland system*, J. Phys.: Conf. Ser. **563** (2014) 012012; doi: [10.1088/1742-6596/563/1/012012](https://doi.org/10.1088/1742-6596/563/1/012012); arXiv:[1410.0301](https://arxiv.org/abs/1410.0301) [math-ph]
- [2] L. Fehér and T.F. Görbe, *Duality between the trigonometric  $BC_n$  Sutherland system and a completed rational Ruijsenaars–Schneider–van Diejen system*, J. Math. Phys. **55** (2014) 102704; doi: [10.1063/1.4898077](https://doi.org/10.1063/1.4898077); arXiv:[1407.2057](https://arxiv.org/abs/1407.2057) [math-ph]
- [1] V. Ayadi, L. Fehér, T.F. Görbe, *Superintegrability of rational Ruijsenaars–Schneider systems and their action-angle duals*, J. Geom. Symmetry Phys. **27** (2012) 27-44; doi: [10.7546/jgsp-27-2012-27-44](https://doi.org/10.7546/jgsp-27-2012-27-44); arXiv:[1209.1314](https://arxiv.org/abs/1209.1314) [nlin.SI]

## Posters

- [3] *Elliptic Ruijsenaars–Schneider models on the complex projective space*, Elliptic Hypergeometric Functions in Combinatorics, Integrable Systems and Physics 2017 (EHF-2017); [PDF, 519 kB]
- [2] *Lax representation of the hyperbolic van Diejen system with two coupling parameters*, Integrable Systems Conference at the CSF Ascona 2016; [PDF, 4.4 MB]
- [1] *The trigonometric  $BC_n$  Sutherland system: action-angle duality and applications*, Conference on Finite Dimensional Integrable Systems in Geometry and Mathematical Physics 2015 (FDIS-2015); [PDF, 82 KB]

## PhD thesis

*Integrable many-body systems of Calogero–Ruijsenaars type*, 2017; doi:[10.14232/phd.3595](https://doi.org/10.14232/phd.3595) arXiv:[1705.01333](https://arxiv.org/abs/1705.01333) [math-ph]; url: <http://doktori.bibl.u-szeged.hu/3595/>

## Scientific Students’ Associations Essay (in Hungarian)

*The  $BC_n$  Sutherland model of charged particles as the reduction of free particles on Lie group  $SU(n + 1, n)$* , (Spring 2012)

## Textbooks & supplementary material (in Hungarian)

- [1] I. Gyémánt–T.F. Görbe, *Linear algebra for Physicists*, Polygon Jegyzettár (2011)
- [2] T.F. Görbe, *Linear Algebra for Physicists: Online Supplement*, (2011)
- [3] T.F. Görbe, *Linear Algebra Exercises*, (2011)

## **CONFERENCES, SCHOOLS, SEMINARS, WORKSHOPS**

2017. October	Szeged Geometry Day 2017 Conference, Department of Geometry, Bolyai Institute Szeged, Hungary
2017. July	Finite Dimensional Integrable Systems in Geometry and Math. Phys Conference (talk), Centre de Recerca Matemàtica (CRM) Barcelona, Spain

2017. June	21st UK Meeting on Integrable Models, CFT and Related Topics Conference, School of Mathematics, University of Leeds Leeds, UK
2017. May	Analysis and Probability Seminar Seminar (talk), Division of Analysis and Probability Theory Chalmers University of Technology, Gothenburg, Sweden
2017. April	Theoretical Physics Seminar Seminar (talk), University of Szeged Szeged, Hungary
2017. March	Elliptic Hypergeometric Functions (EHF 2017) Workshop (poster), Erwin Schrödinger Institute, University of Vienna Vienna, Austria
2016. November	Kerékjártó Geometry Seminar Seminar (talk), University of Szeged Szeged, Hungary
2016. October	Integrable Systems Seminar Seminar (talk), University of Leeds Leeds, UK  Mathematical Physics Seminar Seminar (talk), University of York York, UK  Geometry and Mathematical Physics Seminar Seminar (talk), Loughborough University Loughborough, UK
2016. August	Recent Advances in Quantum Integrable Systems (RAQIS'16) Conference (poster), Université de Genève Geneva, Switzerland
2016. July	Geometric and Algebraic Aspects of Integrability Summer School & Conference (poster), London Mathematical Society Durham, United Kingdom  Poisson Geometry in Mathematics and Physics (Poisson 2016) Conference (poster), Zürich Zürich, Switzerland
2016. June	Poisson Geometry in Mathematics and Physics (Poisson 2016) Summer School, Université de Genève Geneva, Switzerland  “Integrable Systems” Conference (poster), Congressi Stefano Franscini (CSF), ETH Zürich Ascona, Switzerland
2016. April	Vector Bundles Learning Seminar

	Seminar (talk), Eötvös Loránd University Budapest, Hungary
2016. March	Physics Workshop Seminar (talk), Eötvös Loránd Kollégium, University of Szeged Szeged, Hungary
	Mathematics PhD Seminar Seminar (talk), Bolyai Institute, University of Szeged Szeged, Hungary
2015. November	Mathematics Workshop Seminar (talk), Eötvös Loránd Kollégium, University of Szeged Szeged, Hungary
2015. October	Mathematics PhD Seminar Seminar (talk), Bolyai Institute, University of Szeged Szeged, Hungary
2015. September	Analysis Seminar Seminar (talk), Institute of Mathematics, BME Budapest, Hungary
2015. July	Finite Dimensional Integrable Systems in Geometry and Mathematical Physics Conference (poster), Stefan Banach International Mathematical Center Będlewo, Poland
2015. June	Integrable systems and Quantum Symmetries (ISQS-23) Conference (contributed talk), Czech Technical University in Prague Prague, Czech Republic
2015. April	Physics PhD Seminar Seminar (talk), Institute of Physics, University of Szeged Szeged, Hungary
	Representation Theory Seminar Seminar (talk), KdV Institute for Mathematics, University of Amsterdam Amsterdam, The Netherlands
2015. January	Vertex algebras, W-algebras, and applications (Part II) Winter School, INdAM Intensive Period - “Perspectives in Lie Theory” Scuola Normale Superiore, Pisa, Italy
2014. December	Vertex algebras, W-algebras, and applications (Part I) Winter School, INdAM Intensive Period - “Perspectives in Lie Theory” Scuola Normale Superiore, Pisa, Italy
2014. October	Mathematics PhD seminar Seminar (talk), Bolyai Institute, University of Szeged Szeged, Hungary
2014. September	The 3rd summer school on geometry of differential equations (GDEQ-3) Summer School, Silesian University in Opava

	Opava, Czech Republic
2014. June	Integrable systems and Quantum Symmetries (ISQS-22) Conference (contributed talk), Czech Technical University in Prague Prague, Czech Republic
	Conference for PhD students in physics (DOFFI-3) Conference (contributed talk), Roland Eötvös Physical Society Balatonfenyves, Hungary
2013. December	Theoretical Physics Seminar Seminar (talk), Department of Theoretical Physics, University of Szeged Szeged, Hungary
2013. September	Advanced Course on Geometry and Dynamics of Integrable Systems Summer School, Centre de Recerca Matemàtica (CRM) Barcelona, Spain
2013. April	XXXI. National Scientific Students' Associations Conference Conference (talk), Budapest University of Technology and Economics Budapest, Hungary
2012. August	Quantum gravity Summer School, University of Szeged Szeged, Hungary
2012. April	Scientific Students' Associations Conference Conference (talk), University of Szeged Szeged, Hungary

## TEACHING EXPERIENCE

Lectures for physics students since 2010:

- Analytical Mechanics
- Application of Symbolic Languages in Physics
- Linear Algebra for Physicists
- Mathematical Methods in Physics 1 & 2
- Selected Topics in Mathematical Physics
- Group Theory for Physicists

Lectures for students in correspondence training since 2011:

- Application of Symbolic Languages in Physics
- Linear Algebra for Physicists
- Mathematical Methods in Physics 1

## LANGUAGES

Mother tongue     **Hungarian**

Foreign languages     **English**, advanced (C1) language exam, 2012  
                                 **German**, intermediate (B2) language exam, 2005