

PÉTER PÓSFAY



posfay.peter@wigner.mta.hu

pospet@caesar.elte.hu

PERSONAL INFORMATION

Mobile: +36-20-233-97-86

Date of birth: 1989. 11. 03.

Nationality: Hungarian

Place of birth: Kiskunfélegyháza

Mailing Address:

Address:

3. II/1, Szárnyas utca,
Budapest, H-1107
Hungary

16. Baross tér,
Lajosmizse, H-6050
Hungary

EDUCATION

Sep 2014 - Currently **PhD student** at Eötvös Loránd University, Budapest
Department of Nuclear Physics

Research topic: **Field theoretical methods in Astrophysics**

Sep 2012 - Jul 2014 **Physics MSc**

Eötvös Loránd University, Budapest

Relevant modules:

Astrophysics: General Relativity, Gravity Waves, Cosmology,

Particle Physics: Finite Temperature Quantum field theory,
Functional Renormalization Group, Standard Model,

QCD phase structure

Sep 2008 - Jul 2012 **Physics BSc**

Budapest University of Technology and Economics

Sep 2004 - Jul 2008 Bolyai János Grammar School, Kecskemét

Excellent Graduation

Participation in summer and winter schools:

Jul 2014 NIC2014, Nuclei in Cosmos Summer School

Feb 2015 53. Internationale Universitätswochen für Theoretische Physik
Intersection Between QCD and Condensed Matter

- Sep 2015 NewCompstar Summer School 2015 Dense Matter in Compact Star
Experimental and Observational Signatures
- Dec 2015 Zimányi Winter School, Budapest
- Feb 2016 54. Internationale Universitätswochen für Theoretische Physik
New Trends in Particle Physics, Quantum Gravity and Cosmology
- Sep 2016 NewCompStar School 2016 - "Neutron stars: gravitational physics theory
and observations
- Dec 2016 Zimanyi Winter School on heavy ion physics 2016
- Feb 2017 Quark Matter 2017, Student day

WORK EXPERIENCE

- Nov 2014 -Currently **Assistant Research Fellow**
Wigner Research Centre for Physics of the HAS Department of Theoretical
Physics
Quantum Field Theoretical Methods in the Description of Nuclear Matter
with emphasis on Cold Nuclear Matter, Neutron Stars and Astrophysical
Applications
- Sep 2014 - Currently **Instructor** of laboratory practices at Eötvös Loránd University:
Measurement of Cherenkov-radiation, NMR-measurement
- Feb 2016 - Jul 2016 **assistant lecturer: Problems in Electrodynamics**
- Aug 2010 - Jan 2011 **Assistant Research Fellow**
HAS, Chemical Research Centre, Department of Biology and
Nanochemistry
Software development for SAXS experiments simulation, experience with
SAXS measurements, SAXS instrument development

SKILLS

- IT Working knowledge of Mathematica, Python, C++, Experience with Matlab,
Maple, Excellent knowledge of LaTeX, MS office, Openoffice, Linux
- Communication 9 presentations on international physics conferences in english, 5 posters
on international physics conferences, experience in team work in laboratory
- Languages English (fluent), German (basic), Hungarian (native)
- Awards Scientific Students' Association Award, 3rd price, 2009
- Other Driving Licence, B category

SCIENTOMETRIC DATA

Number of publications:	6
Impact factor:	10.621
Number of citations:	21

PUBLICATION

- [1] Jakovác, A. Patkós and P. Pósfay : *Non-Gaussian fixed points in fermionic field theories without auxiliary Bose fields* *Eur. Phys. J. C* (2015) **75**: 2
(Impact factor: 4.912)
DOI: [10.1140/epjc/s10052-014-3228-1](https://doi.org/10.1140/epjc/s10052-014-3228-1)
- [2] P.Pósfay, G. G.Barnaföldi and A.Jakovác: *FRG Approach to Nuclear Matter at Extreme Conditions*, arXiv:1510.04906 [hep-ph], PoS (EPS-HEP2015) 369
- [3] G.G. Barnafoldi, A. Jakovac, P. Posfay: *Harmonic expansion of the effective potential in Functional Renormalization Group at finite chemical potential* arXiv:1604.01717 [hep-th], *Phys. Rev. D* 95, 025004 (2017)
(Impact factor: 3.91)
DOI: [10.1103/PhysRevD.95.025004](https://doi.org/10.1103/PhysRevD.95.025004)
- [4] Szilvia Karsai, Péter Pósfay, Gergely Gábor Barnaföldi, Béla Lukács: *Testing a possible way of geometrization of the strong interaction by a Kaluza–Klein star*, *Int. J. Mod. Phys. A* **31**, 1645031 (2016)
(Impact factor: 1.799)
DOI: [10.1142/S0217751X16450317](https://doi.org/10.1142/S0217751X16450317)
- [5] G.G. Barnafoldi, A. Jakovac, P. Posfay: *An Application of Functional Renormalization Group Method for Superdense Nuclear Matter*, *J.Phys.Conf.Ser.* 779 (2017) no.1, 012048
DOI: [10.1088/1742-6596/779/1/012048](https://doi.org/10.1088/1742-6596/779/1/012048)
- [6] Karsai Szilvia Barnaföldi Gergely Gábor Forgácsné Dajka Emese Pósfay Péter: *Neutroncsillagok – a világegyetem legnagyobb atommagjai*, *Nukleon* VIII. évf. (2015) 185
- [7] Pósfay Péter, Barnaföldi Gergely, Jakovác Antal: *A neutroncsillagok extrém anyagának vizsgálata új térelméleti módszerekkel* , *Fizikai Szemle*, (September 2017)

POSTERS

- [1] P. Pósfay, A. Jakovác, A. Patkós, G. Barnaföldi: *Non-Gaussian fixed points in fermionic field theories* ,
53. Internationale Universitätswochen für Theoretische Physik, Schladming, Styria, Austria, 1-6 March 2015 poster session
- [2] P.Pósfay, G. G.Barnaföldi and A.Jakovác: *FRG Approach to Nuclear Matter at Extreme Conditions*,
NewCompstar Summer School 2015 Dense Matter in Compact Stars: Experimental and Observational Signatures, Bucharest, Romania, 20-25 September 2015 poster session
- [3] P.Pósfay, G. G.Barnaföldi and A.Jakovác: *Functional Renormalization Group Approach to Nuclear Matter at Extreme Conditions*,
Quark matter Conference 2015, Kobe, Japan, 27 September - 3 October poster session
- [4] Karsai, Sz., Barnaföldi, G. G., Pósfay, P., Forgács-Dajka, E.: *Compact Stars in Kaluza–Klein World* ,
Dense Matter in Compact Stars: Experimental and Observational Signatures NewCompStar School 2015, Bucharest, Romania, 20-25 September 2015 poster session
- [5] P.Pósfay, G. G.Barnaföldi and A.Jakovác: *Functional Renormalization Group Approach to Nuclear Matter at Extreme Conditions*,
54. Schladming Winter School of Theoretical Physics, Schladming, Austria, 22. February 2016 poster session
- [6] P.Pósfay, G. G. Barnaföldi and A. Jakovác: *FRG Approach to Nuclear Matter in Extreme Conditions Harmonic expansion of the effective potential at finite chemical potential*,
NewCompStar School 2016 - "Neutron stars: gravitational physics theory and observations" Coimbra, Portugal, 07.September 2016 poster session
- [7] P.Pósfay, G. G. Barnaföldi and A. Jakovác: *Believe it or not: Exact Calculations of Superdense Nuclear Matter Equation of State in Compact Stars by FRG Method!*,
Quark Matter Conference 2017 Chicago, IL, USA, 05-11.February 2017 poster session

TALKS PRESENTED

- [1] NewCompstar 2015 conference, Budapest, Hungary (15-19 June 2015) :
Functional Renormalization Group Approach to Nuclear Matter
- [2] EPS HEP2015 conference, Vienna, Austria (22-29 July 2015) :
Functional Renormalization Group Approach to Nuclear Matter
- [3] ACHT2015 Strong Interactions in Quantum Field Theory, Leibniz, Austria (7-9 October 2015) :
Functional Renormalization Group Approach to Nuclear Matter
- [4] Zimanyi Winter School 2015, Budapest, Hungary (7-11 December 2015) :
Functional Renormalization Group Approach to Nuclear Matter

- [5] Statisztikus Fizikai Nap 2016, Budapest, Hungary (08. April 2016) :
Kölcsönható fermiongáz vizsgálata véges kémiai potenciálon a Funkcionális Renormcsoport módszerre
- [6] Eötvös Loránd Fizikátársulat Vándorgyűlés 2016, Szeged, Hungary (24-27 August 2016) : :
Maganyag vizsgálata FRG módszerrel
- [7] ACHT2016 Non-perturbative aspects of Quantum Field Theory, Cakovec, Croatia, (05-07 October 2016) :
FRG approach to nuclear matter: Harmonic expansion of the effective potential
- [8] Zimanyi Winter School 2016, Budapest, Hungary (05-09 December) :
The FRG Method as a Novel Technique for Calculating Superdense Nuclear Matter Equation of State in Compact Stars
- [9] University of Illinois at Urbana-Champaign Theoretical Physics Seminar, Urbana-Champaign, IL, USA (14 February 2017) :
Exact Calculations of Superdense Nuclear Matter Equation of State in Compact Stars by FRG Method
- [10] NewCompstar 2017 conference, Warsaw, Poland (27-31 March 2017) :
Exact Calculations for Effective Models of Cold Nuclear Matter
- [11] Statisztikus Fizikai Nap 2017, Budapest, Hungary (21. April 2017) :
A neutroncsillagok megfigyelhető mennyiségei és a maganyag kvantumosság jellege
- [12] Logic, Relativity and Beyond 2017, Hungary, Budapest (23-27 August 2017)
Connection between neutron star observables and the quantum nature of nuclear matter
- [13] ACHT2017 Non-Perturbative Methods in Quantum Field Theory, Zalakaros, Hungary, (20-22 September 2017) : *The effect of bosonic quantum fluctuations on nuclear equation of state and neutron star observables*
- [14] Simonyi emléknep 2017, Hungarian Academy of Sciences, Budapest, Hungary (16 October) : *Neutroncsillagok Anyaga*
- [15] Náboj Physics Competition 2017, Budapest, Hungary (20 October) :
Neutroncsillagok Anyaga
- [16] *Kozmosz Kalauz 2017*, Budapest, Hungary (3rd December):
Neutroncsillagok
- [17] Zimanyi Winter School 2017, Budapest, Hungary (04-08 December) :
The role of quantum corrections in effective theories of cold nuclear matter

WON APPLICATIONS

- NewCompStar Conference 2017 Student Support
- Quark Matter 2017 Conference Student Fellowship
- NewCompStar School 2016 Student support
- Wigner Travel Support for Young Researchers 2016
- NewCompStar School 2015 Student support
- Wigner Travel Support for Young Researchers 2015
- NIC 2014 Summer School Student Support

25th January 2018

.....