

1. Full name:

Sechin Ivan Andreevich

2. Date of birth:

16.07.1994

3. Contacts:

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4. Languages:

Russian, English

5. Education:

(1) 09.2012–07.2016:

Bachelor of Applied Mathematics and Physics,
Moscow Institute of Physics and Technology,
Department of General and Applied Physics,
Theoretical Astrophysics and Quantum Field Theory Chair

Bachelor thesis:

”Associative Yang-Baxter Equation and its Applications in the Integrable Systems”

scientific advisor: Zotov A. V.

(2) 09.2016–07.2018

Master of Applied Mathematics and Physics (with honour),
Moscow Institute of Physics and Technology,
Department of General and Applied Physics,
Theoretical Astrophysics and Quantum Field Theory Chair

Master thesis:

”Anisotropic Integrable Long-Range Spin Chains and their Hamiltonians”

scientific advisor: Zotov A. V.

(3) 09.2017–07.2020:

Yandex School of Data Analysis,
Data Analysis Department

(4) 11.2018–11.2022: PhD student,

Skolkovo Institute of Science and Technology,
Center for Advanced Studies.

PhD Thesis:

”Quantum R -matrix Identities and Integrable Systems”

scientific advisors: Zabrodin A.V. and Zotov A.V.

6. Publications:

(1) I. Sechin, A. Zotov

”Associative Yang–Baxter Equation for Quantum (Semi-)Dynamical R -matrices”

J. Math. Phys. 57 (2016) 053505,

DOI: [10.1063/1.4948975](https://doi.org/10.1063/1.4948975),

[arXiv:1511.08761](https://arxiv.org/abs/1511.08761)

(2) I. Sechin, A. Zotov

” R -matrix-valued Lax Pairs and Long-Range Spin Chains”

Physics Letters B, 781 (2018) 1-7,

DOI: [10.1016/j.physletb.2018.03.062](https://doi.org/10.1016/j.physletb.2018.03.062),

[arXiv:1801.08908](https://arxiv.org/abs/1801.08908)

- (3) A. Grekov, I. Sechin, A. Zotov
 "Generalised model of interacting integrable tops"
 Journal of High Energy Physics, 10(2019) 081,
 DOI: [10.1007/JHEP10%282019%29081](https://doi.org/10.1007/JHEP10%282019%29081),
[arXiv:1905.07820](https://arxiv.org/abs/1905.07820)
- (4) I. Sechin, A. Zotov
 "GL(NM) quantum dynamical R-matrix based on solution of the associative Yang–Baxter equation"
 Russian Math. Surveys, 74:4 (2019) 767-769,
 DOI: [10.1070/RM9897](https://doi.org/10.1070/RM9897),
[arXiv:1905.08724](https://arxiv.org/abs/1905.08724)
- (5) I. Sechin, A. Zotov
 "Integrable System of Generalized Relativistic Interacting Tops"
 Theoret. and Math. Phys., 205:1 (2020) 1292-1303,
 DOI: [10.1134/S004057792010004](https://doi.org/10.1134/S004057792010004),
[arXiv:2011.09599](https://arxiv.org/abs/2011.09599)
- (6) I. Sechin, A. Zotov
 "Quadratic algebras based on SL(NM) elliptic quantum R-matrices"
 Theoret. and Math. Phys., 208:2 (2021) 1156-1164,
 DOI: [10.1134/S0040577921080110](https://doi.org/10.1134/S0040577921080110),
[arXiv:2104.04963](https://arxiv.org/abs/2104.04963)

7. Teaching:

- 2017–2020:
 Introduction seminar for 1st and 2nd grade students of Quantum Field Theory department of Moscow Institute of Physics and Technology.
Course content:
Special relativity theory, relativistic mechanics, basics of general relativity theory, classical field theory, applications of Lie groups and Lie algebras in physics, basics of quantum mechanics.
- 2021:
 Course "Methods of Integrable Systems" for 5th grade students of Quantum Field Theory department of Moscow Institute of Physics and Technology.
Course content:
Affine Lie algebras and related integrable systems, 2d Yang–Mills and Calogero–Moser system, Hitchin integrable systems, Gaudin model, spectral curves, spectral duality.
- 2022:
 Course "Group-theoretical Methods in Integrable Systems" for 4th grade students of Quantum Field Theory department of Moscow Institute of Physics and Technology.
Course content:
Hamiltonian approach to classical mechanics, basics of symplectic geometry, momentum map and Hamiltonian reduction, classical integrability, Lax pair and classical r-matrix structure, integrable systems related to Lie algebras, KdV equation and Virasoro algebra.

8. Work experience:

04.2016–10.2022:

Institute for Theoretical and Experimental Physics (ITEP), Moscow,
 junior researcher in the students and doctorants department

11.2018–12.2022:

Steklov Mathematical Institute of Russian Academy of Sciences, Moscow
 junior researcher in the Theoretical Physics Department