



INSTYTUT MATEMATYCZNY

POLSKIEJ AKADEMII NAUK



NARODOWE CENTRUM NAUKI

Student scholarship in the NCN OPUS 30 grant ***Geometry of infinite Young tableaux***

The Institute of Mathematics of the Polish Academy of Sciences offers a scholarship as part of the NCN OPUS 29 grant „Geometry of infinite Young tableaux” led by Prof. Piotr Śniady.

Application deadline: July 15th, 2026 (23:59 CET)

Commencement of scholarship: Starting from August 1st, 2026

Terms of scholarship:

1. The project provides one scholarship.
2. The call is addressed to doctoral students and students of Polish universities and scientific institutes, including Bachelor’s and Master’s students.
3. The scholarship amount is **5000 PLN per month** for a period of 47 months, with the possibility of extension up to a maximum of 48 months.
4. The rules for awarding scholarships under NCN-funded projects are set out in the Regulations ([annex](#) to NCN Council Resolution No. 25/2019 of 14 March 2019).

Task description:

The PhD student will lead project’s Objectives A and B (geometric foundations, stability analysis) while supporting computational infrastructure. This work will constitute a complete PhD thesis.

Objective A responsibilities: (1) Prove that each jeu de taquin tree has a well-defined asymptotic direction almost surely under Plancherel measure. (2) Establish that the map from jeu de taquin tree asymptotic directions to input sequence values is a bijection, providing explicit geometric characterization of the inverse RSK map. This objective provides the foundation for all subsequent objectives in the research program.

Objective B responsibilities: Investigate how the recording tableau responds to modifications of the input sequence. Explore the conjecture that finitary perturbations of the input produce only finitely many changes in the output tableau almost surely under Plancherel measure. Investigate connections to plactic monoid structure and Knuth equivalence.

Computational infrastructure responsibilities: (1) Develop computational tools for geodesic extraction and statistical analysis. (2) Maintain computational verification

systems (Python/Sage implementation). (3) Create reproducible research infrastructure supporting the project's open science commitment.

The PhD student will collaborate closely with the PI on representation-theoretic methods and with the postdoctoral researcher whose theoretical work will build on the geometric foundations. Regular joint meetings will facilitate knowledge transfer and manuscript co-authorship.

Required documents:

1. CV including academic achievements, awards, and distinctions.
2. A description of participation in courses related to the project scope, e.g. probability theory, combinatorics, algebra, together with exam grades, if applicable.
3. Description of research interests
4. One letter of recommendation, sent directly by the referee to: psniady@impan.pl (by 15 July 2026, 23:59).
5. Signed [statement](#) on the processing of personal data for recruitment purposes.

The selection of candidates will be made by a selection committee chaired by the project leader. Candidates may be invited for an interview. If there are no suitable candidates, the competition may remain unresolved.

Those interested in the offer are requested to send the above-mentioned documents (in pdf format) by the **15th of July, 2026** (by 23:59) to the following email address: psniady@impan.pl.

The results will be announced one week after the application deadline. For more information about the position, please contact the principal investigator.

We encourage all qualified candidates to apply, regardless of gender, race or ethnic origin, religion or belief, disability, age, or sexual orientation.

Deputy Director
for Scientific Matters
Institute of Mathematics PAS

Prof. Piotr Nowak