Vacancy: PhD fellowship (4 years) in the domain of finite geometry with applications in coding theory and cryptography

Project description

The FWO (Research Foundation Flanders[1], Belgium) and SNSF (Swiss National Science Foundation[2]) recently granted a joint research project between the Vrije Universiteit Brussel and the University of St. Gallen, with PIs prof. dr. Anna-Lena Horlemann (St. Gallen) and prof. dr. Jan De Beule (VUB). This research project brings together the fields of finite geometry, algebraic coding theory and post-quantum cryptography[3].

PhD Fellowship

In the framework of this project, we are now opening a PhD fellowship in the Department of Mathematics and Data Science (WIDS) at VUB, `https://wids.research.vub.be`

- Focus Area: finite geometry and its applications in coding theory and cryptography.

- Duration: full time PhD fellowship for 4 years. Earliest possible starting date: September 1st, 2025, latest possible starting date, January 1st, 2026. Ideal starting date is October 1st, 2025, the start of the academic year in Belgium.

- Job description:

    - Do research in the focus area, under supervision of the PIs of the research project.
    - Your research is part of a PhD track, and the objective is to compile and defend a PhD thesis during the 4th year of the fellowship
    - The joint research is ideally part of a joint PhD track between VUB and the university of St. Gallen.
    - Be part of the international research community in the focus area.
    - A small contribution to the teaching load of the department is not a necessity, but will be very much appreciated.

- Requirements:

    - A master degree in (pure) mathematics from a university in the European Economic Area.
    - English as working language.
    - Knowledge of Dutch is a not a necessity, but could be considered as an asset.
    - Background in finite geometry, coding theory, or cryptography at master level.
    - Willingness to spend a sufficient amount of time at the partner university (St. Gallen) to fulfill the requirements of a joint PhD will be an asset.

- We offer:

    - A PhD fellowship, which, in Belgium, comes with a net salary of a full time teaching assistant at university, including health care and social security. The salary is by law the same as the salaries offered by the research foundation itself for PhD fellows, see Chapter 8, Art. 32 of `https://www.fwo.be/en/support-programmes/regulations/phd-fellowship-fundamental-research/` and is 2.600 € net per month.
    - Bench fee to enable you to participate in international conferences in the field of research.
    - A dynamic and growing research environment, with PhDs and postdocs also doing research in finite geometry and related topics. The website of the research group Mathematics and Data Science is `https://wids.research.vub.be`
    - More practical information about working in Brussels and the Vrije Universiteit Brussel can be found at `https://www.vub.be/en/working-for-vrije-universiteit-brussel-vub`

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[1] www.fwo.be

[2] www.snf.ch

[3] `https://researchportal.vub.be/en/projects/finite-geometry-applications-to-coding-theory-and-cryptography`

How to apply

If mathematics is your passion, you are interested in the field of research of the project, and you recognize yourself in the focus area and the job description, we are very much looking forward to receive your application for this position. Please send a motivation letter explaining your interest in this position, and a CV including an overview of your study results by e-mail to Jan.De.Beule@vub.be. Last year master students graduating by the end of this academic year are also strongly encouraged to apply for this position. Any enquiries about this position can be sent as well be e-mail to Jan.De.Beule@vub.be. Please keep in mind the following.

– Application deadline: Monday June 23th, 2025.

– Online job interview: between June 24th and July 4th, can be delayed.

– If accepted for the fellowship, enrollment procedure as PhD student at university (during July - August).

– When accepted by the university as PhD student, contract is offered (early September).

– Ideal starting date: October 1st, 2025.

– The fellowship has a duration of 4 years, contracts will be offered on a yearly base.