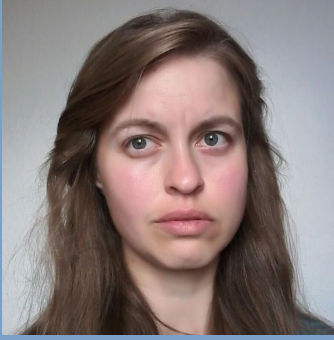


# BIOGRAPHY



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Project number  
2259/02/01

Project duration  
9/2022 - 8/2024

”

When I got my PhD in mathematical and general physics in 2015 at FMFI UK, I had a few years behind me spent in the field notorious for dealing with abstract mathematical tools. These were used to explore modifications of quantum mechanical models \*, verification of which was far from the reach of any experiment possible then, now and for some time coming. As theoretical as it gets. Later I spent roughly the same amount of time as an assistant at Technical University in Liberec, where I was dealing with students of engineering, mechatronics and other sorts of areas that are considered to be „applied science“.

These two worlds of abstraction and application are not desperately disparate – in fact they share quite a few recurring themes and tools – and I hope this project could help put this idea a bit forward. It may be an opportunity to contact people having or starting careers in technical fields, not satisfied with viewing physics as a science of plugging into formulas, as well as people with background in that „unpractical“ pure mathematical physics who sometimes find themselves with the choice between leaving either their field or this country. This project could perhaps help people from both camps meet and learn from each other and together. The careers of people involved could benefit from gaining some input outside of the usual sources and opportunities to collaborate could arise in the process.

## PROJECT SUMMARY

### Common ground between theoretical physics and technical sciences

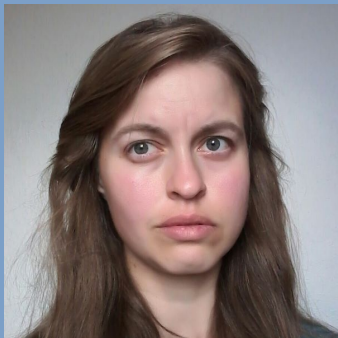
The project aims at exploring, highlighting and potentially expanding the common ground between the fields of theoretical physics and technical sciences. The task is approached in two partly overlapping ways:

A) Researching the mathematical models and tools used in theoretical physics and technical fields, tracking down the shared themes, highlighting them and looking for possibilities to exploit these overlaps for further more direct communication between seemingly disparate STEM (science-technology-engineering-mathematics) areas.

B) Seeking ways to supplement the current trends in science popularization (especially related to physics) with options more closely tailored for the audience with background or interest in engineering and technology.

The search for the less known overlaps between theoretical physics and technical branches of STEM and their exploitation are to be started in the academic environment (particularly suited to foster interdisciplinary efforts), and hopefully it could spread further.

The assumed target users of the results of the project are researchers, educators and students in variety of STEM fields, people choosing or reconsidering their careers in such fields, and interested broader public.



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## PUBLICATIONS

V Gáliková, S Kováčik, P Prešnajder: Laplace-Runge-Lenz vector in quantum mechanics in noncommutative space (2013), Journal of Mathematical Physics 54 (12), 122106  
<https://doi.org/10.1063/1.4835615>

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<http://www.physics.sk/aps/pubs/2015/aps-15-03/aps-15-03.pdf>