

Viktor Frederik Majewski

Homepage <https://viktormajewski.github.io/index.html>

Curriculum Vitae

Research Interest

- Differential Geometry** gauge theory, moduli problems in differential geometry, special holonomy spaces, special (higher) geometric structures, symplectic geometry
- Algebraic Geometry** (derived) C^∞ -geometry, categorification of geometry, homological algebra, moduli problems in algebraic geometry
- Analysis** Fredholm theories for elliptic operators on singular and non-compact spaces, geometric measure theory
- Physics** axiomatic approaches to quantum field theories, String-, M- and F-theory, general relativity

Education

- 2024 **Research Stay**, *Simons Laufer Mathematical Science Institute (MSRI)*, Berkeley, invited by Prof. Jason Lotay
Semester Program: Special Geometric Structures and Analysis
- 2022–20(25) **PhD in Mathematics**, *Humboldt-University*, Berlin
- 2019–2022 **Master of Science Mathematics (with distinction)**, *Georg-August-University*, Göttingen, supervised by Prof. Victor Pidstrygach
Title: Topological Twisted Super Field and Generalised Seiberg-Witten Theories
- 2017–2019 **Bachelor of Science Mathematics**, *Georg-August-University*, Göttingen, supervised by Prof. Victor Pidstrygach
Title: Hyperkähler Geometry of Nilpotent Lie Groups and Twistor Spaces
- 2016–2021 **Bachelor of Science Physics**, *Georg-August-University*, Göttingen, supervised by Prof. Dorothea Bahns
Title: $\mathcal{N} = 4$ Super Yang-Mills Theory as a Super Twistor String Theory

Fellowship

- 2022–2025 **BMS scholarship holder**, *Berlin Mathematical School*, Berlin

Teaching

- 2021 **Teaching Assistant**, *Georg-August-University*, Göttingen
Tutor for the course *Mathematics for Physicists II* by Prof. Dr. Ralf Meyer
- 2020–2021 **Teaching Assistant**, *Georg-August-University*, Göttingen
Tutor for the course *Differential Geometry and Gauge Theory I* by Prof. Dr. Victor Pidstrygach
- 2020 **Teaching Assistant**, *Georg-August-University*, Göttingen
Tutor for the course *Analysis II* by Prof. Dr. Dorothea Bahns
- 2019–2020 **Teaching Assistant**, *Georg-August-University*, Göttingen
Tutor for the course *Analysis I* by Prof. Dr. Dorothea Bahns

Publications and Preprints

- 2024 **Dirac Operators on Adiabatic Ricci-Flat Orbifold Resolutions: Uniform Elliptic Theory**, (*expected*)
- 2024 **Resolutions of $\text{Spin}(7)$ -Orbifolds**, (*expected*)

Work in Progress

- 2025 **$\text{Spin}(7)$ -Instantons on Resolutions of $\text{Spin}(7)$ -Orbifolds I: Construction**, (*expected*)
- 2025 **Cayley Submanifolds Resolutions of $\text{Spin}(7)$ -Orbifolds I: Construction**, (*expected*)
- 2025 **Product-Type $\text{Spin}(7)$ -Orbifolds and their Resolutions**, (*expected*), joint-work with D.Platt (Imperial Collage London)

Social Engagement

- 2022–2023 **Student Representative**, *Berlin Mathematical School*, Berlin

Invited Talks

- Oct. 2024 **University Waterloo**, *$\text{Spin}(7)$ -Orbifold Resolutions*
- Oct. 2024 **Simons Laufer Mathematical Sciences Institute (MSRI)**, *Dirac Operators on Orbifold Resolutions*
- May 2024 **Duke University**, *$\text{Spin}(7)$ -Orbifold Resolutions*, Simons Collaboration on Special Holonomy in Geometry, Analysis and Physics-Meeting
- Feb. 2024 **Technical University of Berlin**, *$\text{Spin}(7)$ -Orbifold Resolutions*, BMS Student Conference

References

- Prof. Dr. Thomas Walpuski (PhD Supervisor)**, *Humboldt University of Berlin*, thomas.walpuski@hu-berlin.de
- Prof. Dr. Jason Lotay**, *University of Oxford*, jason.lotay@maths.ox.ac.uk
- Prof. Dr. Spiro Karigiannis**, *University of Waterloo*, karigiannis@uwaterloo.ca
- Prof. Dr. Victor Pidstrygach (Master/Bachelor Supervisor)**, *Georg-August-University Göttingen*, Victor.Pidstrygach@mathematik.uni-goettingen.de