

Filip Samuelson

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EDUCATION

PhD in Mathematics August 2020 – Present
Stony Brook University, USA

Bachelor of Science in Mathematics and Physics September 2016 – January 2020
Roskilde University, Denmark

EMPLOYMENT

Research Assistant January 2020 – July 2020
Roskilde University
Conducting and optimizing computer simulations of geodesic flow on certain high dimensional manifolds with applications to the research field of viscous liquids. The position was a part of the Geodesic Liquid project founded by a VILLUM grant given to professor Thomas Schröder.

Study Environment Tutor June 2017 – July 2019
Roskilde University
As study environment tutor, I helped strenghtening the teamspirit, social framework and academic environment for new students at Roskilde University.

TEACHING

Teaching Assistant August 2020 – Present
Stony Brook University

- MAT 118 – Mathematical Thinking
- MAT 126 – Calculus B
- MAT 127 – Calculus C
- MAT 131 – Calculus I
- MAT 200 – Logic, Language and Proof
- MAT 211 – Introduction to Linear Algebra
- MAT 308 – Differential Equations with Linear Algebra
- MAT 540 – Advanced Topology, Geometry I

OTHER UNIVERSITY SERVICES

Seminar Organizer

- Mathematics Graduate Student Seminar at Stony Brook University (For the academic year 2020/2021)

University Politics

- Elected Member of the Study Board for the bachelor educations in natural sciences at Roskilde University.

PUBLICATIONS

Publications

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Preprints

- Conformal renormalization of compact sets (joint with C. L. Petersen) arXiv:2111.01924.
- A toy model for viscous liquid dynamics arXiv:2206.03000.

RESEARCH INTERESTS

My research area is homotopy theory of foliations. I am interested in using tools from differential and algebraic topology, as well as related fields such as differential geometry and model theory, to study foliations on smooth manifolds.

In particular my Ph.D. thesis concerns itself with existence of transversally holomorphic foliations on open manifolds.