

Aleksander Doan

ADDRESS Department of Mathematics, Stony Brook University
Stony Brook, NY 11794-3651, USA
E-MAIL aleksander.doan@stonybrook.edu
WEBSITE <http://www.math.stonybrook.edu/~adoan>

RESEARCH INTERESTS

differential geometry, gauge theory, symplectic geometry, low-dimensional topology

EMPLOYMENT

from July 2019 **Columbia University**
Postdoctoral Research Scientist
Junior Fellow of the Simons Society of Fellows
from Oct 2019 **Trinity College, University of Cambridge**
Junior Research Fellow

EDUCATION

2014—2019 **Stony Brook University**
PhD in Mathematics (expected in May 2019)
Advisor: Simon Donaldson
2013—2014 **Trinity College, University of Cambridge**
Part III of the Mathematical Tripos (Distinction)
2012—2013 **University of Bonn**
The Erasmus Programme
2009—2012 **University of Warsaw**
BA in Mathematics (Distinction)

AWARDS & FELLOWSHIPS

2019—2023 Trinity College Junior Research Fellowship, University of Cambridge
2019—2022 Junior Fellowship in the Simons Society of Fellows
2019 Stony Brook University President's Award to Distinguished Doctoral Students
2017—2019 Funded by Simons Collaboration on Special Holonomy in Geometry, Analysis, and Physics
2013—2014 Trinity College Studentship in Mathematics, University of Cambridge

PUBLICATIONS & PREPRINTS

- 2019 Deformation theory of the blown-up Seiberg–Witten equation in dimension three – with T. Walpuski to appear in *Selecta Mathematica*
- 2018 On the existence of harmonic $\mathbb{Z}/2$ spinors – with T. Walpuski to appear in *Journal of Differential Geometry*
- 2018 Seiberg–Witten monopoles with multiple spinors on a surface times a circle to appear in *Journal of Topology* 12 (2019), no. 1, 1–55
- 2018 Adiabatic limits and Kazdan–Warner equations
Calculus of Variations and PDE (2018) 57:124
- 2018 Equivariant Brill–Noether theory for elliptic operators and super-rigidity – with T. Walpuski
preprint, <http://www.math.stonybrook.edu/~adoan/EquivariantBrillNoether.pdf>
- 2018 Castelnuovo’s bound and rigidity in almost complex geometry – with T. Walpuski
preprint, [arXiv:1809.04731](https://arxiv.org/abs/1809.04731)
- 2017 On counting associative submanifolds and Seiberg–Witten monopoles – with T. Walpuski
preprint; [arXiv:1712.08383](https://arxiv.org/abs/1712.08383)

INVITED TALKS

- 2019 *Geometry & Topology Seminar*, Massachusetts Institute of Technology (scheduled)
- 2019 *Gauge Theory and Symplectic Geometry Seminar*, Columbia University (scheduled)
- 2019 *Geometric Analysis Seminar*, Rutgers University (scheduled)
- 2019 *Geometry Seminar*, University of Rochester
- 2018 *Special Metrics and Gauge Theory*, Instituto de Ciencias Matemáticas, Madrid
- 2018 *Topology Seminar*, Brandeis University
- 2018 *Geometry Seminar*, Stanford University
- 2018 *Differential Geometry Seminar*, UC Berkeley
- 2018 *Gauge–Topology–Symplectic Seminar*, Harvard University
- 2018 *Almost Complex Geometry Seminar*, City University of New York
- 2018 *Geometry & Topology Seminar*, Michigan State University
- 2018 *Geometry Seminar*, Stanford University
- 2018 *Topology Seminar*, Princeton University
- 2018 *Gauge Theory and Special Holonomy*, Imperial College London
- 2017 *Geometry & Topology Seminar*, Massachusetts Institute of Technology
- 2017 *Geometric Analysis Seminar*, Institute of Mathematical Sciences, Hong Kong
- 2017 *Special Holonomy: Progress and Open Problems*, Simons Center
- 2017 *Gauge Equations, Geometry, and Strings*, Instituto de Ciencias Matemáticas, Madrid
- 2017 *Geometry & Topology Seminar*, Duke University
- 2017 *Geometry & Topology Seminar*, Stony Brook University
- 2016 *Recent Developments in the Mathematical Study of Gauge Theory*, Simons Center

TEACHING EXPERIENCE

- 2014–2019 Teaching Assistant, Stony Brook University
Courses: Calculus I (three semesters), Calculus II, Calculus IV, Analysis I, Geometry and Topology II (two semesters), History of Mathematics
- 2014–2019 Tutor at the Mathematics Learning Center, Stony Brook University
- 2018 Lecturer at the Stony Brook Math Summer Camp for high school students

PROFESSIONAL ACTIVITIES

Co-organizer of the *Introductory Workshop: Analytic and Geometric Aspects of Gauge Theory 2022*,
Mathematical Sciences Research Institute, Berkeley

Referee for peer-reviewed journals: *Advances in Mathematics*, *Communications in Analysis and Geometry*, *International Mathematics Research Notices*, *Pacific Journal of Mathematics*

REFERENCES

Simon Donaldson (PhD advisor)

Simons Center for Geometry and Physics

✉ sdonaldson@scgp.stonybrook.edu

Kenji Fukaya

Simons Center for Geometry and Physics

✉ kfukaya@scgp.stonybrook.edu

Rafe Mazzeo

Stanford University

✉ mazzeo@math.stanford.edu

Clifford Taubes

Harvard University

✉ chtaubes@math.harvard.edu

Robert Hough (teaching)

Stony Brook University

✉ robert.hough@stonybrook.edu