

Eric Boulter

CONTACT INFORMATION	Department of Pure Mathematics University of Waterloo 200 University Avenue West Waterloo, Ontario, N2L 3G1	etboulte@uwaterloo.ca
RESEARCH INTERESTS	Complex geometry, holomorphic symplectic manifolds, moduli of vector bundles, (co)-Higgs bundles	
EDUCATION	University of Waterloo (2018-2023) Ph.D. in Pure Mathematics Advisor: Ruxandra Moraru Topic: Vector Bundles on Non-Kähler Elliptic Surfaces University of Waterloo (2017-2018) M.Math in Pure Mathematics Advisor: Ruxandra Moraru Topic: Born structures on compact complex surfaces University of Victoria(2013-2017) B.Sc. in Mathematics <ul style="list-style-type: none">• Minor in physics	
PUBLICATIONS AND PREPRINTS	E. Boulter , R. Moraru. <i>(Co)-Higgs Bundles on Non-Kähler Elliptic Surfaces</i> (2022), (submitted. Preprint available at arXiv:2210.09839). E. Boulter . <i>Moduli Spaces of Stably Irreducible Sheaves on Kodaira Surfaces</i> (2021), (submitted. Preprint available at arXiv:2112.00058). E. Boulter , F. Diacu, S. Zhu. <i>The N-body problem in spaces of uniformly varying curvature</i> , J. Math Phys. 58 (2017), no. 5, 052703.	
INVITED TALKS	June 1 2023 – “Generalizations of Higgs bundles on elliptic surfaces of non-Kähler type” – Workshop <i>The Geometry, Algebra, and Physics of Higgs Bundles</i> at Banff International Research Station, University of British Columbia–Okanagan December 3 2022 – “Moduli Spaces of Sheaves on Kodaira Surfaces” – Session on complex geometry and moduli spaces, Canadian Mathematical Society Winter Meeting November 18 2022 – “Moduli Spaces of Sheaves on Kodaira Surfaces” – Séminaire de géométrie algébrique, Centre interuniversitaire de recherches en géométrie et topologie	
PRESENTATIONS	June 5-June 9 2023 – “Moduli spaces of sheaves on Kodaira surfaces” – poster for Workshop and school on complex Lagrangians, integrable systems, and quantization at University of Oxford March 7 2023 – “Co-isotropic foliations in holomorphic symplectic manifolds” – Waterloo Differential Geometry Working Seminar	

August 9 2022 – “The Spectral Construction for Vector Bundles on Elliptic Surfaces”
– Waterloo Algebraic Geometry Working Seminar

October 5 2021 – “Fourier Transforms in Algebraic Geometry” – Waterloo Algebraic
Geometry Working Seminar

December 11 2020 – “Smooth and Compact Moduli Spaces of Sheaves on Kodaira
Surfaces” – Waterloo Geometry and Topology Seminar

November 26 2019 – “Plane Old Tilings” – Waterloo Pure Math Student Colloquium

June 20 2019 – “The Parallel Postulate: A 2000-Year Controversy” – Waterloo
PMath/C&O Joint Colloquium

TEACHING

University of Waterloo

Algebra for Honours Math, Fall 2020 (coordinated course with in-person lectures)

PROFESSIONAL
DEVELOPMENT

Winter 2020: Participant in Math faculty graduate teaching seminar

Fall 2017: Participant in Math faculty TA training

TEACHING
ASSISTANTSHIPS

University of Waterloo

Winter	2023	Lie Groups and Lie Algebras (marking assignments) Connections and Riemannian Geometry (marking assignments, monitoring Q&A forum) Linear Algebra II (on-call tutoring)
Fall	2022	Smooth Manifolds (marking assignments) Advanced Linear Algebra II (marking assignments, holding office hours)
Spring	2022	Number Theory for Teachers (marking assignments)
Winter	2022	Algebraic Geometry (marking assignments and exams)
Fall	2021	Algebra (marking assignments and exams, supervising undergrad- uate markers) Smooth Manifolds (marking assignments and exams, monitoring Q&A forum)
Spring	2021	Algebraic Geometry (marking assignments)
Winter	2021	Advanced Linear Algebra I (marking assignments, holding office hours) Connections and Riemannian Geometry (marking assignments, monitoring Q&A forum)
Winter	2020	Chaos and Fractals (marking assignments and exams) Algebraic Geometry (marking assignments and exams, substitute lecturing)
Fall	2019	Advanced Calculus I (marking assignments and exams, teaching tutorials) Group Theory (marking assignments and quizzes, holding office hours) Groups and Rings (marking assignments and exams)
Spring	2019	Advanced Linear Algebra II (marking assignments and exams, holding office hours)

Winter	2019	Advanced Calculus II (marking assignments and exams, teaching tutorials, holding office hours) Differential Geometry (marking assignments and exams)
Fall	2018	Linear Algebra for Engineering (marking assignments and exams, teaching tutorials) Proofs for Math Teachers (marking assignments) Fractals for Math Teachers (marking assignments)
Spring	2018	Advanced Multivariable Calculus (marking assignments, substitute lectures) Linear Algebra I (marking quizzes and exams)
Winter	2018	Algebra (marking assignments and exams, supervising undergraduate markers) Linear Algebra for Electrical Engineering (teaching tutorials, marking assignments and exams)
Fall	2017	Linear Algebra for Science (marking exams, teaching tutorials, holding office hours) Differential Equations for Electrical Engineering (marking assignments and exams)

HONOURS AND AWARDS

2019-2022: NSERC Alexander Graham Bell Canada Graduate Scholarship-Doctoral, University of Waterloo

Topic: Compact Born Manifolds
Advisor: Ruxandra Moraru

2017: NSERC Undergraduate Student Research Award, University of Victoria

Topic: The Vlasov-Poisson equation in hyperbolic space
Advisor: Slim Ibrahim

2016: NSERC Undergraduate Student Research Award, University of Victoria

Topic: The N -body problem in spaces of uniformly varying curvature
Advisor: Florin Diacu

GRADUATE COURSEWORK

<input type="checkbox"/> Gauge Theory	<input type="checkbox"/> Homological Algebra
<input type="checkbox"/> Geometry of Integrable Systems	<input type="checkbox"/> Special Riemannian Structures
<input type="checkbox"/> Algebraic Geometry	<input type="checkbox"/> Functional Analysis
<input type="checkbox"/> Riemann Surfaces	<input type="checkbox"/> Harmonic Analysis
<input type="checkbox"/> Representation Theory	<input type="checkbox"/> Class Field Theory
<input type="checkbox"/> Deformation Theory (audit)	<input type="checkbox"/> Geometric Inv. Theory (audit)
<input type="checkbox"/> Algebraic Stacks (audit)	

SERVICE

Served as peer mentor to incoming graduate students, fall 2020 and fall 2021

Co-organized department's peer mentorship program fall 2022

Co-organized department grad student visit day winter 2021

Organized department algebraic geometry working seminar fall 2022 and winter 2023