

JAMES KOHOUT

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RESEARCH INTERESTS

I am interested in geometric analysis and nonlinear PDEs, in particular geometric flows, harmonic maps, minimal surfaces and Łojasiewicz inequalities (especially in the presence of singularities).

EDUCATION

DPhil in Mathematics 2017 – present
University of Oxford

Title: Łojasiewicz inequalities for the harmonic map energy
Supervisor: Prof. Melanie Rupflin
EPSRC Centre for Doctoral Training in Partial Differential Equations

MMath 2013 – 2017
University of Warwick

Graduated with First Class Honours
Dissertation: “Nadirashvili’s Conjecture” supervised by Prof. Peter Topping

PUBLICATIONS

Research Papers

J. Kohout *Łojasiewicz inequalities for the harmonic map energy on degenerating cylinders*, in preparation.

J. Kohout, M. Rupflin and P. M. Topping *Uniqueness and nonuniqueness of limits of Teichmüller harmonic map flow*, Adv. Calc. Var. (2020) <https://doi.org/10.1515/acv-2019-0086>.

Other

J. Kohout *Notes on the Łojasiewicz-Simon inequality*, <http://people.maths.ox.ac.uk/kohout/ŁojasiewiczNotes.pdf>

FURTHER RESEARCH EXPERIENCE

PDE CDT Mini Project June 2018 – September 2018
Partial regularity for elliptic systems with antisymmetric potentials
Supervisor: Prof. Luc Nguyen

PDE CDT Mini Project January 2018 – April 2018
Horizontal Curves of Hyperbolic Metrics
Supervisor: Prof. Melanie Rupflin

Undergraduate Research Project Summer 2016
Geometric Topology in Cholesteric Liquid Crystals
Supervisor: Prof. Gareth Alexander

Undergraduate Research Project

Summer 2015

Modelling Non-equilibrium Dynamics of Osmium Deposited on Graphene

Supervisors: Dr. David Quigley and Dr. Nicholas Hine

CONFERENCES AND TALKS

Talks

Joint CDT Conference, University of Cambridge (online)	December 2020
Bringing Young Mathematicians Together (online)	December 2020
Junior Mathematicians Research Archive (online, youtu.be/61DL_S_lxOc)	November 2020
PDE CDT Lunchtime Seminar, University of Oxford (online)	October 2020
Gradient Flows and Variational Methods in PDEs, University of Ulm	November 2019

Attended

Geometric Analysis and General Relativity, ETH Zurich	June 2019
OxBridge PDE Conference, University of Oxford	March 2019
Geometric Analysis, ICMS Edinburgh	May 2018
OxBridge PDE Conference, University of Cambridge	March 2018
Geometry - in honour of Mario Micalef's 60th birthday, University of Warwick	May 2017
Geometric PDEs, University of Warwick	December 2016

ORGANISATIONAL ACTIVITIES

PDE Student Seminar Organizer, University of Oxford	2019 – 2020
Secretary, Keble College MCR, University of Oxford	2018 – 2019
Consultative Committee for Graduates, Mathematical Institute, University of Oxford	2017 – 2018
Student Staff Liaison Committee, University of Warwick	2013 – 2016

TEACHING

Tutor	2020–2021
<i>Mathematical Institute, University of Oxford</i>	
Functional Analysis I (year 3)	
Tutors are in charge of organizing and teaching problems classes (roughly 10 students)	
Teaching Assistant	2018 – 2020
<i>Mathematical Institute, University of Oxford</i>	
Functional Analysis II (year 3)	
Functional Analysis I (year 3)	
Geometric Analysis and PDEs (graduate course)	
Introduction to Manifolds (year 2)	
Teaching assistants mark problem sheets and assist in teaching problems classes (roughly 10 students)	
College Tutor	2018 – 2019
<i>Keble College, University of Oxford</i>	
Linear Algebra I (year 1)	
College tutors mark work and teach tutorials to students in groups of 1-3	

Supervisor

2016 – 2017

Mathematics Institute, University of Warwick

Small group teaching and marking of 8 first year students in the courses: Mathematical Analysis, Differential Equations, Abstract Algebra, Linear Algebra

AWARDS AND SCHOLARSHIPS

EPRSC Scholarship, Centre for Doctoral Training in Partial Differential Equations	2017 – 2021
University of Warwick Undergraduate Research Support Scheme	Summer 2016
University of Warwick Undergraduate Research Support Scheme	Summer 2015
Malta Government Scholarship Scheme	2014 – 2017

SKILLS

Languages	English (native)
Computing	L ^A T _E X, Python, MATLAB. Exposure to Java, C, C++

CITIZENSHIP

Malta (EU) and USA