Tim Hosgood

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Research

Current research. Defining Chern classes in Hodge and Deligne (i.e. holomorphic) cohomology for coherent sheaves on paracompact complex-analytic manifolds using twisting cochains and simplicial methods. Following on from work by Brylinski and McLaughlin; Grivaux; O'Brian, Toledo, and Tong; and Green.

Research interests. Homotopy theory, derived algebraic geometry, higher category theory, applied category theory.

Education and academic employment

2019 –	**Scientist**
Université de Montpellier	as part of the DerSympApp project (ERC grant 768679).
2016 –	**Doctorat (en Mathématiques)**
Université d'Aix-Marseille	under Julien Grivaux and Damien Calaque.
2012 – 2016	**MMath (Masters in Mathematics), BA Mathematics**
University of Oxford	First class honours, upper second-class honours (resp.).
2006 – 2012	**A-Levels, GCSEs**
Kingsley School, Bideford	Maths, Further Maths, Music (A*), French, Spanish (A)

Papers

1. **An introduction to varieties in weighted projective space.** 2016.
   arxiv.org/abs/1604.02441
   (Comments: Undergraduate summer project with Balázs Szendrői; in need of rewriting.)
2. **Death and extended persistence in computational algebraic topology.** 2016.
   arxiv.org/abs/1609.00920
   (Comments: Secondary master's thesis; currently under review for submission.)
3. **Simplicial Chern-Weil theory for coherent analytic sheaves, part I.**
   (Comments: In progress.)
4. **Simplicial Chern-Weil theory for coherent analytic sheaves, part II.**
   (Comments: In progress.)

Conference and seminar talks

2019 **Simplicial Chern-Weil theory**
DerSympApp, Université de Montpellier

Twisting cochains and twisted complexes
Young Topologists Meeting, Lausanne

2018 **Des méthodes simpliciales pour la géométrie complexe**
Conférence de l'équipe AGT d'Aix-Marseille

2017 **Les classes de Chern des fibrés vectoriels dans la cohomologie de Hodge**
Séminaire Géométrie Complexe d'Aix-Marseille

Teaching

Université d'Aix-Marseille

2018 – 2019 **Maths en anglais.** *3rd-year undergraduates, English*
Real analysis (Heine-Borel, Bolzano-Weierstrass, etc.); helping French students to improve their mathematical English.
Calcul différentiel. *2nd-year undergraduates, French*
Basic topology and multivariable calculus.

2017 – 2018 **Algèbre linéaire.** *2nd-year undergraduates, French*
Vector spaces, linear maps, eigenspaces, Jordan normal form.

Kingsley School, Bideford

2013 **Further Mathematics A-Level.** *Sixth-form, English*
FP1, FP2, D2 (Edexcel).
Mathematics A-Level. *Sixth-form, English*
C1 – C4, D1, M1 (Edexcel).

Other professional experience

2016 **IT Technician and Help-desk Manager**
Hertford College, University of Oxford
Led site-based IT development and network infrastructure upgrades. Managed staff and student help desk for the entire college, with responsibilities including hardware repair and software support. Improved registration systems with shell-scripting automation (Ruby, Bash). Various server management and maintenance tasks.

2014 **Network Functions Virtualisation Intern**
Metaswitch, Cambridge
Worked as part of the NFV team on the Virtual Route Reflector. Researched and presented information to the whole team on various aspects of network configuration management (e.g. NETCONF, TACACS+) before implementing them. Set up test systems for aforementioned aspects, as well as others. Gained experience with C, Bash, and Python. Completed an Effective Communications course, as well as a three-day hackathon.