Curriculum Vitae

Andreas Holmstrom
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RESEARCH INTERESTS

Interactions between homotopy theory and arithmetic geometry. Cohomology theories in algebraic and arithmetic geometry. Brown representability theorems in algebraic geometry. The Beilinson regulator, motivic homotopy theory, Arakelov geometry, higher arithmetic Chow groups, special values of L-functions, schematic homotopy types.

PUBLICATIONS

- Higher arithmetic Chow groups for schemes over Spec Z (in preparation)
- Realizing the Beilinson regulator in motivic homotopy theory (in preparation)
- A first note on arithmetic spaces (in preparation)

MATHEMATICAL EDUCATION

2007-2010 PhD program, University of Cambridge, United Kingdom. Advisor: Prof. Tony Scholl.
2005-2006 Certificate of Advanced Study in Mathematics ("Part III"), University of Cambridge. Graduated with distinction.
2001-2005 MSc in Engineering Physics, Royal Institute of Technology (KTH), Stockholm, Sweden.
2004-2005 Exchange student at École Polytechnique Fédérale de Lausanne, Switzerland.

WORK EXPERIENCE

2007-2010 Supervising undergradates in Cambridge in the following courses: Riemann surfaces, Groups rings and modules, Number theory, and Algebraic geometry.
Jan 2007 – Jan 2008 Marie Curie Early Stage Researcher, EU Arithmetic Algebraic Geometry network / University of Cambridge.
2006 Lecturer, University of Nairobi, Oct-Dec. Taught Linear algebra and Introduction to abstract algebra.
2003 Summer internship, UNICEF, Nairobi, Kenya.
Numerous other part-time and summer jobs during my studies.

CONFERENCES ORGANISED

Initiated and co-organised a successful graduate student conference on homotopy theory in Cambridge in Dec 2007, with 30 participants from more than 10 countries.

TALKS GIVEN

At graduate student seminars in Cambridge:

- Homotopy theory over Spec Z. Nov 2009.
- L-functions in arithmetic geometry. Oct 2009.
- What are simplicial sheaves? Feb 2009.
- Global Langlands functoriality. March 2008.
- Galois representations from torsion points on elliptic curves. Nov 2007.
- Cohomology theories in algebraic geometry. June 2007.
- Complex multiplication and modular curves. Feb 2007.
- Iwasawa theory. Spring 2006.

Other talks:

- Simplicial sheaves and cohomology theories. At the Algebra and Geometry graduate student conference, KTH, Stockholm, May 2009.
- What is a geometric category? At the Young Researchers in Mathematics conference, Cambridge, April 2009.
- Brown representability and arithmetic geometry. At the Graduate Homotopy theory conference, Cambridge, Dec 2007.
- L-functions in number theory. University of Nairobi Colloquium talk, Nov 2006.
- What is etale cohomology? Part III seminar, Cambridge, March 2006.
- Elliptic curves over C. Graduate seminar, Ecole Polytechnique Fédérale de Lausanne, spring 2005.
- L-functions and Tate's thesis. Presentation of MSc thesis, KTH, Sep 2005.

CONFERENCES ATTENDED

- Focused workshop on F1-geometry, Granada, Nov 2009.
- Advanced School on Homotopy theory and Algebraic geometry, Seville, Sep 2009.
- Motivic homotopy theory, Münster, July 2009.
- Algebraic K-theory and Motivic Cohomology, Oberwolfach, June 2009.
- British-Nordic Congress of Mathematicians, Oslo, June 2009.
- Algebra and Geometry (Nordic graduate student conference), KTH, Stockholm, May 2009.
- Young Researchers in Mathematics, Cambridge, April 2009.
- The Grothendieck conference, IHES, Jan 2009.
- Workshop on Diophantine approximation and Arakelov theory, Fields Institute, Toronto, Oct 2008.
- Homotopical group theory and topological algebraic geometry, Bonn, June 2008.
- The Abel Symposium on Algebraic Topology, Oslo, Aug 2007.
- Motives and algebraic cycles, Fields Institute, Toronto, March 2007.
- Homotopy theory of schemes, Fields Institute, Toronto, March 2007.
- LMS/EPSRC short course: Topics in Arithmetic Geometry, London, Aug 2006.

COMPETITIONS

Was awarded an Honourable mention at the IMO (International Mathematical Olympiad) 2000 in South Korea. I also participated in IMO 1999 in Romania, and have ranked among the very best students in Sweden in numerous other competitions in programming, physics, and mathematics.

GRANTS AWARDED

For the PhD program: (approximate figures)
- Royal Swedish Academy of Sciences (Magnusons): £ 13 000.
- Sixten Gemzeus foundation: £ 9 000.
- Cambridge European Trusts: £ 14 000.
- Johan and Jakob Söderberg foundation: £ 12 000.

For my undergradate studies:
Smaller amounts (up to £2500) from each of the following sources: Oscar Ekman Foundation for Sweden Abroad, KTH General Funds, Söderman's Extra, The C E Wikström Foundation, Ahlner's, Österby's, ERASMUS support, Sandviken foundation for excellence in studies at KTH, The Swedish Association for Graduate Engineers.

OTHER ACTIVITIES

- Am running the mathematical blog "Motivic Stuff".
- Member of the Swedish Mathematical Society.
- Member of the London Mathematical Society.
- Fellow of the Cambridge Philosophical Society.