

FIONNTAN WOUTER MURRAY ROUKEMA

Personal details

Single, no dependants
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EDUCATION

- Ph.D. in mathematics, *Dehn Surgery on the Minimally Twisted Five-Chain Link*, University of Pisa, 2008-2011, supervised by Dr. Bruno Martelli and Prof. Carlo Petronio.
- M.Sc. in mathematics, University of Toronto, 2005-2007.
- M.A.St. in mathematics, University of Cambridge, 2003-2004.
- B.Sc. (Hons), *first class* in mathematics, University of Edinburgh, 1999-2003.
- Exchange student in mathematics, University of California at Berkeley, 2001-2002.

PUBLICATIONS

Prints/articles to appear:

- *Dehn Surgery on the Minimally Twisted 5-chain Link*, Ph.D. thesis, University of Pisa, 2011, available at http://etd.adm.unipi.it/theses/available/etd-09212011-102615/unrestricted/roukema_thesis.pdf.
- (with Bar-Natan, D., Halacheva, I., Leung, L.), *Some Dimensions of Spaces of Finite Type Invariants of Virtual Knots*, J. of Experimental Math., **20** (2011), 282-287, available at <http://arxiv.org/pdf/0909.5169v1.pdf>.
- *Goussarov-Polyak-Viro Combinatorial Formulas for Finite Type Invariants*, J. Knot. Theory. Ram., accepted, available at <http://arxiv.org/pdf/0711.4001.pdf>.

Preprints:

- (with Martelli, B., Petronio, C.), *Exceptional Dehn Surgery on the Minimally Twisted 5-Chain Link*, submitted, available at http://arxiv.org/PS_cache/arxiv/pdf/1109/1109.0903v1.pdf.
- *Exceptional Slopes on Manifolds of Small Complexity*, submitted, available at <http://arxiv.org/pdf/1210.1824.pdf>.

In preparation:

- (with Garcia Lecuona, A., Audoux, B.) *Hyperbolic Knots with Exceptional pairs at "Maximal" Distance*, title provisional.

EMPLOYMENT

- **Research and Teaching Associate, 2011-present** School of Mathematics and Statistics, University of Sheffield.
- **Teaching Assistant, 2005-2007** Department of Mathematics, University of Toronto.

- **Private Tutor, 2001-2008** Independently organised tutorials
- **Japanese Exchange and Teaching Program, 2004-2005** Akita City Board of Education, Japan.

SCHOLARSHIP, AWARDS, RESEARCH PROJECTS

- FIRB *Geometry and topology of low-dimensional manifolds* (RBFR10GHHH) member, 2012-2016.
- *Interdoc Fellowship*, University of Pisa, 2011.
- *Galileo Galilei Fellowship*, University of Pisa, 2008-2010.
- *U. of T. Fellowship*, University of Toronto, 2006-2007.
- *Connaught Scholar*, University of Toronto, 2005-2007.
- *European Trusts*, University of Cambridge, 2003-2004.
- *Isabella Dick awards* (various), University of Edinburgh, 2000-2003.

TALKS

Conference talks:

- *Dehn surgery on hyperbolic knots*, Young Topology Meeting, Imperial College London, April 2013.
- *Dehn surgery on the minimally twisted 5-chain link*, Geometric Topology of Knots, workshop at CRM, May 2011.
- *The minimally twisted 5-chain link and the Berge conjecture*, Young Researchers in Mathematics 2011, conference, April 2011.
- *A nice extension property*, Young Researchers in Mathematics 2009, conference, April 2009.
- *English as a second language and teaching methodology*, Akita Board of Education, multiple presentations 2004-2005.

Seminar/colloquium talks:

- *The minimally twisted 5-chain link*, University of Warwick, May 2013.
- *Dehn surgery of hyperbolic knots*, University of Edinburgh, May 2013.
- *An overview of Dehn surgery*, University of Manchester, April 2013.
- *Exceptional pairs at maximal distance*, Uni. di Pisa, Nov. 2012.
- *Dehn fillings of manifolds with small volume* (two part), University of Sheffield, Feb. 2012.
- *Dehn surgery and examples of exceptional pairs at maximal distance*, Centre de Mathématiques et Informatique Uni. de Provence, Nov. 2011.
- *Dehn fillings of the minimally twisted five chain link*, Uni. Autònoma de Barcelona, Dec. 2010.
- *Exceptional pairs and the minimally twisted five chain link*, Uni. de Genève, Nov. 2010.

- *Thurston's hyperbolic filling theorem*, University College Cork, Seminar, January 2010.
- *Computing type n invariants of knots with n fingers*, UCC, Geom. seminar, Dec. 2007.
- *Sub-diagram formulas*, University of Toronto, Knot at lunch (informal seminar series), July 2007.

CONFERENCE AND SUMMER SCHOOL PARTICIPATION

- *Topology in Low Dimensions*, Durham, 2013.
- *Geometric Topology in Cortona: Interactions of Quantum Topology and Hyperbolic Geometry*, Cortona, 2013.
- *Young Topology Meeting*, Imperial College London, 2013.
- *Transpennine Topology Triangle meetings*, (multiple) Nottingham, Sheffield, 2011-2013.
- *27th British Topology meeting*, Cambridge, 2012.
- *Induction Course for New Lecturers in Maths, Stats and Operational Research*, Nottingham, 2012.
- *2012 Clay Research Conference*, Oxford, 2012.
- *Homotopy and Geometry of Loop Spaces*, miniconference, Sheffield, 2012.
- *Geometry and Dynamics on Teichmüller space*, minicourse and lecture series, The Hamilton Mathematical Institute, Trinity College Dublin, 2011.
- *Knots and Applications*, 3-month intensive research period; 1 summer school, 9 workshops, and 1 conference, CRM Pisa, 2011.
- *Spring School in Geometry and Quantum Topology*, Les Diablerets, 2011.
- *Young Researchers in Mathematics*, Cambridge 2009 and 2010, Warwick 2011.
- *Advanced School and Conference on Knot Theory and its Applications to Physics and Biology*, ICTP Trieste, 2009.
- *Master-class de géométrie*, Institut de Recherche Mathématique Avancée, IRM Strasbourg, 2009.
- *Braid Groups and their Ramifications*, Cortona, 2007.