

CURRICULUM VITAE FOR ERIK DARPÖ

PhD in Mathematics. Born 31th December 1979 in Sandviken, Sweden.

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1. DOCTORAL DEGREE:

PhD in Mathematics awarded 24th February 2009 by Uppsala University.

2. POSTDOCTORAL EXPERIENCE:

Junior Research Fellow at Somerville College, University of Oxford. 2009/10/01 – 2001/08/31.

JSPS Postdoctoral Fellow, Nagoya University. 2011/09/20 – 2013/09/19.

3. PRESENT POSITION:

Senior Lecturer, Mälardalens Högskola. From 2013/09/01.

4. PREVIOUS POSITIONS:

Amanuens (Teaching Assistant) at Uppsala University, Department of Mathematics. 2000/09/01 – 2003/06/30. Part time, 20%.

Doktorand (Doctoral Student) at Uppsala University, Department of Mathematics. 2003/07/01 – 2009/09/04. Leave of absence 2005/02/01 – 2005/12/31. 20% teaching stint.

Liegrits Predoctoral Fellow at University of Almería. 2007/11/01 – 2008/01/31.

Fulford Junior Research Fellow at Somerville College, University of Oxford. 2009/10/01 – 2011/09/19.

JSPS Postdoctoral Fellow at Nagoya University. 2011/09/20 – 2013/08/30.

5. EDUCATION:

1999 – 2003	Student at Uppsala University.
2003 – 2009	PhD student at Uppsala University, Department of Mathematics.
Feb 2005 – Dec 2005	On leave for language studies at Uppsala University and Beijing Guangbo Dianshi Daxue.

6. FUNDING, AWARDS:

2007: Marie Curie Predoctoral Grant (€5131.20, covering my 3 months Liegrits Predoctoral Fellowship in Almería).

2009: Postdoctoral Fellowship from Vetenskapsrådet (534'700 kr).

2009: Shortlisted for the Dorothy Hodgkin Fellowship, awarded by the Royal Society (UK).

2011: Shortlisted for the Dorothy Hodgkin Fellowship, awarded by the Royal Society.

2011: JSPS Postdoctoral Fellowship awarded by Japan Society for the Promotion of Science (8'888'000 JPY, or ca 700'000 kr).

7. RESEARCH VISITS:

- University of Almería, Spain. 2007/11/01 – 2008/01/31.
- University of Almería, Spain. 2009/05/03 – 2009/05/22.
- University of Nagoya, Japan. 2010/07/28 – 2010/08/04.
- Universidad de la Rioja, Spanien. 2011/03/29 – 2011/04/02.

8. LANGUAGES:

Swedish (native), English (proficient), Chinese (good), Spanish (basic), German (basic), Japanese (basic).

9. SCIENTIFIC PUBLICATIONS

9.1. Publications in international journals.

- (1) Erik Darpö, Ernst Dieterich and Martin Herschend. In which dimensions does a division algebra over a given ground field exist? *L'Enseignement Mathématique* 51:255–263, 2005.
- (2) Erik Darpö. [On the classification of the real flexible division algebras](#), *Colloquium Mathematicum* 105(1):1–17, 2006.
- (3) Erik Darpö and Ernst Dieterich. [Real commutative division algebras](#), *Algebras and Representation Theory* 10(2):179–196, 2007.
- (4) Erik Darpö. [Normal forms for the \$\mathcal{G}_2\$ -action on the real symmetric \$7 \times 7\$ -matrices by conjugation](#), *Journal of Algebra* 312(2):668–688, 2007.
- (5) Erik Darpö. [Classification of pairs of rotations in finite-dimensional Euclidean space](#), *Algebras and Representation Theory* 12(2–5):333–342, 2009.
- (6) Erik Darpö. [Vector product algebras](#), *Bulletin of the London Mathematical Society* 41(5):898–902, 2009.
- (7) Erik Darpö. [Some modern developments in the theory of real division algebras](#), *Proceedings of the Estonian Academy of Sciences* 59(1):53–59, 2010.
- (8) José Antonio Cuenca Mira, Erik Darpö and Ernst Dieterich. [Classification of the finite dimensional absolute valued algebras having a non-zero central idempotent or a one-sided unity](#), *Bulletin des Sciences Mathématiques* 134:247–277, 2010.
- (9) Erik Darpö and Martin Herschend. [On the representation ring of the polynomial algebra over a perfect field](#), *Mathematische Zeitschrift* 265(3):601–615, 2010.
- (10) Erik Darpö and Abdellatif Rochdi. [Classification of the four-dimensional power-commutative real division algebras](#), *Proceedings of the Royal Society of Edinburgh: Section A Mathematics* 141(6):1207–1223, 2011.
- (11) Erik Darpö and Ernst Dieterich. [The double sign of a real division algebra of finite dimension greater than one](#), *Math. Nachr.* 285(13):1635–1642, 2012.
- (12) Erik Darpö and José María Pérez Izquierdo. [Autotopies and quasigroup identities: new aspects of non-associative division algebras](#), *arXiv:1205.6250*, 2012 (36 pages). *Accepted for publication in Forum Mathematicum*.
- (13) Erik Darpö and Christopher C. Gill. [The Loewy length of a tensor product of modules of a dihedral two-group](#), 2013 (17 pages). *Accepted for publication in Journal of Pure and Applied Algebra*.

9.2. Conference proceedings.

- (14) Erik Darpö and Christopher C. Gill. The Loewy length of tensor products for dihedral two-groups. In *Proceedings of the 44th symposium on Ring Theory and Representation Theory*, pages 23–29, Symp. Ring Theory Represent. Theory Organ. Comm., Nagoya, 2012.

- (15) Erik Darpö and Christopher C. Gill. Decomposing tensor products for cyclic and dihedral groups. *Proceedings of the 45th symposium of Ring Theory and Representation Theory*, pages 24–28, Nago, 2013.

9.3. Preprints.

- (16) Erik Darpö. [Isotopes of Hurwitz algebras](#), *arXiv:1012.1849*, 2010 (9 pages).

9.4. Popular Science.

- (17) Erik Darpö. Reella vektorprodukter (“Real vector products”), *Normat* 55(4):157–165, 2007.

9.5. Doctoral thesis:

- (18) Erik Darpö. Problems in the classification theory of non-associative simple algebras. *Uppsala Dissertations in Mathematics* 62, Uppsala 2009.

10. TALKS AT INTERNATIONAL CONFERENCES AND SEMINARS

10.1. Invited talks at conferences and workshops.

- 1.1. “On the classification of finite-dimensional division algebras.” Talk at the workshop *Interpolation, invariants, multilinear forms and related topics*, Lund 2007/10/08.
- 1.2. “Tensor products of modules of some modular group algebras, I–II.” Lectures at the *Shizuoka seminar of algebra*, 2012/7/6–7.
- 1.3. “ n -representation-finite self-injective algebras.” Lecture series at the *Workshop on Higher-Dimensional Auslander-Reiten Theory*, IPM-Isfahan, Iran, 2013/5/7–9.

10.2. Invited seminar talks.

- 2.1. “Normal form problems in the classification theory of e-quadratic algebras.” Lecture in the Department of Algebra, Geometry and Topology, Málaga University, 2007/09/24.
- 2.2. “Flexible division algebras.” Lecture in the Department of Algebra and Mathematical Analysis, University of Almería, 2008/01/30.
- 2.3. “The multiplication algebra of a division algebra” Lecture at the Department of Algebra and Mathematical Analysis, University of Almería, 2009/05/08.
- 2.4. “The multiplication algebra of a division algebra” Lecture at the Department of Algebra, Geometry and Topology, Málaga University, 2009/05/14.
- 2.5. “Power-commutative real division algebras” Lecture at the Algebra and Geometry Seminar, Uppsala University, 2009/10/27.
- 2.6. “The transformation algebra of a division algebra” Lecture at the Representation Theory Seminar, University of Oxford, 2009/11/05.
- 2.7. “Left simple algebras.” Lecture at the Graduate School of Mathematics, Nagoya University, 2010/07/31.
- 2.8. “Left simple algebras and division algebras.” Lecture at the Seminar of Algebra and Discrete Mathematics, School of Mathematical Sciences, University of Nottingham, 2010/11/12.
- 2.9. “On the representation rings of the dihedral 2-groups.” Lecture at the Graduate School of Mathematics, Nagoya University, 2011/09/12.
- 2.10. “The Loewy length of a tensor product of modules of a dihedral two-group.” Lecture at the Department of Mathematics and Informatics, Chiba University, Japan, 2012/12/27.

10.3. Contributed conference talks.

- 3.1. “Classification of the real flexible division algebras.” Lecture at the *Fall Meeting of the Swedish Mathematical Society* in Göteborg, November 2003.
- 3.2. “Restricted quivers in the classification of real division algebras.” Talk at the *Advanced School and Conference in Representation Theory and Related Topics*, Trieste 2006/01/09—27.
- 3.3. “Division algebras and their dimensions.” Talk at *Mini conference in algebra and geometry*, Stockholm University, 2006/06/10—11.
- 3.4. “Invariant subspaces for pairs of rotations.” Talk at the *International conference on non-commutative rings and geometry*, Almería 2007/09/18—22.
- 3.5. “Pairs of rotations in Euclidean space” Talk at *Conference on Algebra and its Applications*, Ohio University, Athens, 2008/06/18—21.
- 3.6. “Normal form problems in the classification theory of division and absolute valued algebras”, talk at the conference *Estructuras de Jordan en Álgebra y Análisis*, Almería 2009/05/21.
- 3.7. “The Clebsch-Gordan problem for the polynomial algebra over a perfect field.” Talk at the *Advanced School and Conference on Homological and Geometrical Methods in Representation Theory*, ICTP Trieste, 2010/01/18—2010/02/05.
- 3.8. “Four-dimensional power-commutative real division algebras.” Talk the conference *Non-associative algebras and related topics*, Coimbra, Portugal, 2011/7/25—29.
- 3.9. “Loewy lengths of tensor products of kD_{2^l} -modules.” Talk at the *Shanghai Conference on Representation Theory of Algebras*, Shanghai Jiao Tong University, China, 2011/10/25—27.
- 3.10. “On the representation rings of the dihedral two-groups.” Talk at the *44th symposium on Ring Theory and Representation Theory*, Okayama University, 2011/09/25—27.
- 3.11. “Loewy lengths of tensor products of kD_{2^l} -modules.” Talk at the *XV International Conference on Representations of Algebras*, Bielefeld, Germany, 2012/8/13—17.
- 3.12. “On the representation rings of the dihedral 2-groups.” Talk at the *45th Symposium on Ring Theory and Representation Theory*, Shinshu University, Japan, 2012/9/7—9.