CURRICULUM VITAE FOR OLAV GEIL
(last update July 22, 2022)
PERSONAL INFORMATION

Date of birth: April 7, 1962

Position: Vice Dean for Education

Affiliation: The Faculty of Engineering and Science, Aalborg University

Email: prodekan-eng-udd@aau.dk andolav@math.aau.dk

ACADEMIC DEGREES:

PhD in Mathematics, Aalborg University, May 17th, 2000.

MSc in Mathematics and Physics, Aalborg University, June 26th, 1996.

EMPLOYMENT:

2018-- Vice Dean for Education, Faculty of Engineering and Science, AalborgUniversity

2014--2018 Professor with Special Responsibilities, Dept. of Math. Sci.,Aalborg University

2002--2014 Associate Professor, Dept. of Math. Sci., Aalborg University

1999--2002 Assistant Professor, Dept. of Math. Sci., Aalborg University

BOARD MEMBERSHIPS

Bestyrelsen for Engineer the Future,2019--

Bestyrelsen for FrederikshavnGymnasium, 2018-2019

Bestyrelsen for Mariagerfjord Gymnasium,2022--

RESEARCH STAYS:

Jaume I University, Castellon, Spain, 2016 (two weeks). / East China NormalUniversity,Shanghai, China, 2013 (ten days). / Basel University, Basel,Switzerland, 2012 (one week). / East China Normal University, Shanghai, China, 2012(ten days). / Tokyo Institute of Technology, 2006 (two weeks). / TechnicalUniversity of Denmark, Lyngby, Denmark, 2000 (2 weeks). / Eindhoven Universityof Technology, Eindhoven, TheNetherlands, 1998 (3 months). /

GRANTS:

Grant holder and principal investigator for research project under DFF-FNU,"How secretis a secret?", DFF-4002-00367, 2014--2017, (2.509.920DKK.)

The Villum Foundation for Ryutaroh Matsumoto as Velux Visiting Professor, 2014,(201.300DKK).

The Villum Foundation for Ryutaroh Matsumoto as Velux Visiting Professor, 2011,(285.000DKK).

MANAGEMENT:

Principal investigator for research project "How secret is asecret?", 7 scientists, 2014--2017.

Chairman for the 1st year mathematics studies development project first.math,2012--2016, (annual budget 7.500.000

DKK).

Participation in "Research Management Course", Copenhagen BusinessSchool, 2016.

Participation in `` Research Management Masterclass 2020`` CBS Executive,2020.

Participation in ``Agil projektledelse``, IDA Learning, 2021.

PUBLICATIONS: (full list at the end of the CV)

Scopus: 49 papers https://www.scopus.com/authid/detail.uri?authorId=6602737792

CITATIONS:

Google Scholar: 897 citations h-index 15,https://scholar.google.dk/citations?user...

REFEREE/REVIEWER:

Finite Fields and Their Applications; Designs, Codes and Cryptography; IEEETransactions on Information Theory; Discrete Mathematics; Advances inMathematics of Communications; Communications of the Korean MathematicalSociety; Journal of Pure and Applied Algebra; Cryptography and Communications;Applicable Algebra in Engineering, Communication and Computing; Journal ofSymbolic Computation; Mathematical Review/MathSciNet; various workshops andconferences.

TALKS: (full list at the end of the CV)

Invited: 33

Contributed: 14

ORGANIZATION OF CONFERENCES/WORKSHOPS:

Dune workshop on secrets, Klitgaarden Skagen, October 2{4, 2017.\Secrets",Technical University of Denmark, November 14, 2016.\Workshop on Applications ofAlgebraic Geometry in Secret Sharing and Coding Theory", AalborgUniversity, June 30, 2014.In collaboration with D. Ruano \4th AGINCCWorkshop", Skagen, Denmark, July 28--31,2013.In collaboration with T.Høholdt, Session "Coding Theory" at "European MathematicalSociety Joint Mathematical Weekend", University of Copenhagen, March 2,2008.\Mini Workshop on Error Correcting Codes and Network Coding", AalborgUniversity,September 19, 2007. In collaboration with L. D. Andersen, "8thNordic Combinatorial Conference", Aalborg University, October 20--22,2004.

PROGRAM COMMITTEE MEMBER:

5th International Caste Meeting on Coding Theory and Applications (ICMCTA) 2017/International Symposium on Network Coding (NetCod) 2014 / Workshop on Codingand Cryptography (WCC) 2013 / / Workshop on the Arithmetic of Finite Fields(WAIFI)2012 / International Workshop on the Arithmetic of Finite Fields (WAIFI)2010

LONG-TERM GUESTS:

F. Hernando, Jaume I University, Spain, 2017 (1 month). / F. Ozbudak, MiddleEastTechnical University, Turkey, 2016 (1 month). / R. Pellikaan, EindhovenUniversity of Technology, The Netherlands, 2016 (2 weeks). / F. Hernando, JaumeI University, Spain,2015 (1 month). / R. Pellikaan, Eindhoven University ofTechnology, The Netherlands,2015 (2 weeks). / R. Matsumoto, Tokyo Institute ofTechnology, Japan, 2014 (3 months)./ F. Hernando, Jaume I University, Spain,2013 (1 month). / Y. Luo, Shanghai Jiao Tong University, China, 2013 (1 month)./ R. Matsumoto, Tokyo Institute of Technology,Japan, 2011 (4.5 months). / C.Galindo, Jaume I University, Spain, 2010 (1 month). / R.Matsumoto, TokyoInstitute of Technology, Japan, 2006 (2 weeks) / M. Sala, University of Trento,Italy, 2006 (1 month). /

PHD STUDENTS:

René Bødker Christensen (co-supervisor 2018—2020), Umberto MartÌnez Peñas(2014--2017), Stefano Martin (2011--2014), Casper Thomsen (2007--2011), HenningE. Andersen (informal co-supervisor 2002--2005)

MASTER STUDENTS:

Kasper Halbak Christensen (2017) / Louise Foshammer (2014) / MalteNeve-Græsbøl (2014) / Henning Thomsen (2012) / Maria Simonsen (2012) / MajkenSvendsen (2012)/ Claus Jensby Madsen (2010) / Thomas H. Skjæbæk (2010) /

NicolaMachetti (2010)/ Elisabeth Kuhr Rasmussen (2005) / Maria Sondrup Iversen (2004)/ Jane Gravgard Knudsen (2004) / Henning E. Andersen (2001)

PHD COURSES GIVEN AT FOREIGN UNIVERSITIES:

5 hours course at "International School and Conference on CodingTheory", CIMAT, Guanajuato,Mexico, November 28 -- December 4, 2008.

In cooperation with Massimiliano Sala, "Summer Doctoral School 2009,Gröbner Bases, Geometric Codes and Order Domains", University of Trento,June 8--13, 2009.

6 hours course at "Soria Summer School on Computational Mathematics",University of Valladolid, July 12--16, 2010.

6hours course at ``Algebraic Coding Theory Summers School 2022,'' University ofZurich, July 4--8, 2022.

PARTICIPATION IN PHD COMMITTEES:

University of Trento (1 student). / Technical University of Denmark (chairmanof 4 committees).

TEACHING:

PhD supervision course, AAU Learning Lab, 2015. / Teaching training course"Adjunktpædagogikum", Pædagogisk Udviklingscenter, AAU, 2001--2002. /Since 1999 teaching at all levels from bachelor to PhD.

PUBLICATION LIST:

Journal publications and articles in books:

1. O. Geil, ``From primary to dual affine variety codes over the Kleinquartic,'' Des. Codes Cryptogr., vol. 90, no. 3, 2022, pp. 523--543.

2. O. Geil, ``On multivariate polynomials with many roots over a finitegrid,'' J.\ Algebra Appl., vol.\ 20, no. 8, 2021, 9 pp.

3. L. B. Bertel, I. Askehave, H. Brohus, O. Geil, A. Kolmos, N. Ovesen, J.Stoustrup, ``Digital Transformation at Aalborg University: InterdisciplinaryProblem and Project Based Learning in a Post-Digital Age,'' Advances inEngineering Education, 2021, 13 pp.

4. R. B. Christensen, O. Geil, ``On nested code pairs from the Hermitiancurve,'' Finite Fields Appl., vol. 68, 2020, 26 pp.

5. R. B. Christensen, O. Geil, ``Steane-enlargement of quantum codes fromthe Hermitian function field,'' Des. Codes Cryptogr., vol. 88, no. 8, 2020, pp.1639--1652.

6. P.\ Beelen, O. Geil, E. Martinez-Moro, X.-W. Wu, ``Foreword - specialissue: Codes, cryptology and curves in honour of Ruud Pellikaan,'' Des.\ CodesCryptogr., vol. 88, no. 8, 2020, pp. 1477--1478.

7. R. B. Christensen, O. Geil, ``On Steane-enlargement of quantum codesfrom Cartesian product point sets,'' Quantum Inf. Process., vol. 19, no. 7,Paper No. 192, 2020, 15 pp.

8. O. Geil, F. Özbudak, D. Ruano, ``Constructing Sequencesvwith HighNonlinear Complexity from Hermitian Function Fields,' 'Semigroup Forum, vol.98, no. 3, 2019, pp. 543--555.

9. D. Ruano, D. E. Lucani, O. Geil, ``Accelerated processing for maximumdistance separable codes using composite extension,'' Proceedings of EuropeanWireless 2019, 25th Eruropean Wireless Conference, pp.\ 1--5.

10. O. Geil, U.\ Martinez-Peñas, ``Bounding the number of common zeros ofmultivariate polynomials and their consecutive derivatives,'' Combinatorics, Probabilityand Computing, vol. 28, no. 2, 2019, pp. 253--279.

11. O.\ Geil, F. Ôzbudak, ``On affine variety codes from the Kleinquartic,'' Cryptography and Communications, vol. 11, no. 2, 2019, pp. 237--257.

12. D. E. Lucani, M. V. Pedersen, D. Ruano, C. W. Sørensen, F. H. P.Fitzek, J. Heide, O. Geil, V. U. Nguyen, M. Reisslein, ``Fulcrum: Flexiblenetwork codes for heterogeneous devices,'' IEEE Access, vol. 6, 2018, 18 pages.

13. C. Galindo, O. Geil, F. Hernando, D. Ruano, ``New binary and ternaryLDC codes,'' IEEE, Trans. Inform. Theory, vol. 65, no. 2, 2018, pp. 1008--1016.

14. C. Galindo, O. Geil, F. Hernando, D. Ruano, ``Improved constructions ofnested code pairs,"
IEEE, Trans. Inform. Theory, vol. 64, 2018, pp. 2444--2459.

15. O. Geil, S. Martin, U. Martinez-Peñas, R. Matsumoto, D. Ruano, "Onasymptotically good ramp secret sharing schemes," IEICE Transactions onFundamentals of Electronics,
Communications and Computer Sciences, vol. E100-A, no. 12, 2017, pp.2699--2708.

16. O. Geil, S. Martin, ``Relative generalized Hamming weights of q-aryReed-Muller codes," Adv. Math. Commun., vol. 11, No. 3, 2017, pp. 503--531.

17. O. Geil, F. Özbudak, ``Bounding the minimum distance of affine varietycodes using symbolic computations of footprints," Proceedings of 5thInternational Castle Meeting, ICMCTA 2017, Lecture Notes in Comput. Sci., vol. 10495,2017, pp. 128--138.

18. O. Geil, D. Lucani, ``Random network coding over composite fields," Proceedingsof 5th International Castle Meeting, ICMCTA 2017, Lecture Notes in Comput. Sci.,vol. 10495, 2017, pp. 118--127.

19. C. Galindo, O. Geil, F. Hernando, D. Ruano, ``On the distance ofstabilizer quantum codes from J-affine variety codes," Quantum Inf. Process.,vol. 16, 2017, 32 pp.

20. O. Geil, C. Thomsen, ``More results on the number of zeros of multiplicityat least r," Discrete Math., vol. 340, 2017, pp. 1028--1038.

21. O. Geil, S. Martin, U. Martinez-Peñas, D. Ruano, ``Refined analysis ofRGHWs of code pairs coming from Garcia-Strichtenoth's second tower," J.\Algebra Comb. Discrete Struct. Appl., vol. 4, 2017, pp. 37--47.

22. R. Matsumoto, D. Ruano, O. Geil, ``List decoding algorithm based onvoting in Gröbner bases for general one-point AG codes," J. Symbolic Comput.,vol. 79, part 2, 2017, pp. 384--410
23. O. Geil, S. Martin, U. Martínez-Peñas, R. Matsumoto, D. Ruano, "Onasymptotically good ramp secret sharing schemes," Proceedings (electronic)of WCC-2015, edited by P. Charpin, 10 pp.11. O. Geil, "Roots andcoefficients of multivariate polynomials over finite fields," FiniteFields Appl., vol. 34, 2015, pp. 36--44.

24. O. Geil, S. Martin, "An improvement of the Feng-Rao bound for primarycodes," Des. Codes Cryptogr., vol. 76 (1), 2015, pp. 49--79.

25. O. Geil, S. Martin, R. Matsumoto, D. Ruano, Y. Luo, "Relativegeneralized Hamming weights of one-point algebraic geometric codes," IEEE,Trans. Inform. Theory, vol. 60 , 2014, pp. 5938--5949.

26. O. Geil, S. Martin, "Further improvements on the Feng-Rao bound fordual codes," Finite Fields Appl., vol. 30, 2014, pp. 33--48.

27. O. Geil, R. Matsumoto, D. Ruano, "Feng-Rao decoding of primarycodes," Finite Fields Appl., vol. 23, 2013, pp. 35--52.

28. R. Matsumoto, D. Ruano, O. Geil, "Generalization of the Lee-O'SullivanList Decoding for One-Point AG Codes," J. Symbolic Comput., vol. 55, 2013,pp. 1--9.

29. O. Geil, C. Thomsen, "Aspects of random network coding," Bookchapter in Algebraic Geometry Modelling in Information Theory, World Scientific(Series on Coding Theory and Cryptography, vol. 8, Edited by EdgarMartinez-Moro, 2013, pp. 47--81.

30. O. Geil, C. Thomsen, "Weighted Reed-Muller codes revisited," Des.Codes Cryptogr.,vol. 66, (1-3), 2013, pp. 195--220.

31. O. Geil, R. Matsumoto, D. Ruano, "List Decoding Algorithms based onGröbner Bases for General One-Point AG Codes," Proceedings of 2012 IEEEInternational Symposium on Information Theory (ISIT), July 1-6, 2012, Boston,MA, USA, pp.86--90.

32. O. Geil, S. Martin, R. Matsumoto, "A new method for constructingsmall-bias spaces from Hermitian codes," Proceedings of WAIFI 2012,Lecture Notes in Comput. Sci.,vol. 7369, 2012, pp. 29--44.

33. O. Geil, C. Munuera, D. Ruano, F. Torres, "On the order bounds forone-point AG codes," Adv. Math. Commun., 2011, pp. 489--504.

34. O. Geil, C. Thomsen, "List decoding of a class of affine varietycodes," Proceedings of WCC-2011, Paris, Ed. by D. Augot and A. Canteaut,pp. 263--272.

35. O. Geil, "Algebraic geometry codes from order domains," Bookchapter in Grobner Bases, Coding, and Cryptography,

Springer, 2009, Eds.:Sala, Mora, Perret, Sakata,Traverso, pp. 121--141.

36. O. Geil, R. Matsumoto, "Bounding the number of rational places usingWeierstrass semigroups," Journal of Pure and Applied Algebra, vol. 213,(6), 2009, pp. 1152--1156.

37. O. Geil, "Evaluation Codes from an Affine Variety CodePerspective," Book chapter in Advances in algebraic geometry codes, Ser.Coding Theory Cryptol., 5, World Sci. Publ., Hackensack, NJ, 2008, Eds.: E.Martinez-Moro, C. Munuera, D. Ruano, pp.153--180.

38. O. Geil, R. Matsumoto, C. Thomsen, "On Field Size and SuccessProbability in Network Coding," Proceedings of WAIFI 2008, Lecture Notesin Comput. Sci., vol.5130, 2008, pp. 157--173.

39. O. Geil, "On the second weight of generalized Reed-Muller codes,"Des. Codes Cryptogr.,vol. 48 (3), 2008, pp. 323--330.

40. H. E. Andersen, O. Geil, "Evaluation Codes from Order DomainTheory," Finite Fields Appl., vol. 14 (1), 2008, pp. 92--123.

41. O. Geil, R. Matsumoto, "Generalized Sudan's list decoding for orderdomain codes, "Proceedings of AAECC-17, Lecture Notes in Comput. Sci.,vol. 4851, Springer-Verlag, 2007, pp. 50--59.

42. O. Geil, C. Thommesen, "On the Feng-Rao Bound for Generalized HammingWeights, "Proceedings of AAECC-16, Lecture Notes in Comput. Sci., vol.3857, Springer-Verlag, 2006, pp. 295--306

43. O. Geil, "On Codes from Norm-Trace Curves," Finite Fields Appl.,vol. 9, 2003, pp.351--371.

44. O. Geil, R. Pellikaan, "On the Structure of Order Domains,"Finite Fields Appl., vol.8, 2002, pp. 369--396.

45. O. Geil, T. Høholdt, "On Hyperbolic Codes," Proceedings ofAAECC-14, Lecture Notes in Comput. Sci., vol. 2227, Springer-Verlag, 2001, pp.159--171.

46. O. Geil, T. Høholdt, "Footprints or Generalized Bezout'sTheorem," IEEE Trans.Inform. Theory, vol. 46, 2000, pp. 635--641.

PhD-thesis

47. O. Geil, "Codes Based on an Fq-Algebra," Department of MathematicalSciences, Aalborg University, 2000. Adviser Christian Thommesen.

Preprints:

48. D. E. Lucani, M. V. Pedersen, D. Ruano, C. W. Sørensen, F. H. P. Fitzek, J.Heide,O. Geil, "Fulcrum network codes: a code for fluid allocation ofcomplexity," 2015, 31pages. Available fromhttp://arxiv.org/pdf/1404.6620v2.pdf.

Peer reviewed summaries and extended abstracts:

49. O. Geil, S. Martin, "Affine variety codes are better than theirreputation," Proceedings of the 21st Symposium on Mathematical Theory ofNetworks and Systems,University of Groningen, 2014, pp. 362--365.

50. O. Geil, S. Martin, R. Matsumoto, D. Ruano, Y. Luo, "Relativegeneralized Hamming weights of one-point algebraic geometric codes,"Proceedings of IEEE Information Theory Workshop (ITW), 2014, pp. 137--141.

51. H. E. Andersen, O. Geil, "The Missing Evaluation Codes from OrderDomain Theory, "Proceedings of 2004 IEEE International Symposium onInformation Theory (ISIT),Chicago, p. 78.

52. O. Geil, T. Høholdt, "On Hyperbolic Type Codes," Proceedings of2003 IEEE International Symposium on Information Theory (ISIT), Yokohama, p.331.

53. O. Geil, "A Class of Groebner Basis Theoretically Based EvaluationCodes," Proceedings of 2002 IEEE International Symposium on InformationTheory (ISIT), Lausanne, p. 60.

54. O. Geil, "Codes from Order Domains," Proceedings of 2001 IEEEInternational Symposium on Information Theory (ISIT), Washington, p. 308.

Book reviews:

55. O. Geil, "Book Review of : Tracey Ho and Desmond S. Lun, NetworkCoding: An Introduction," Computer Journal, vol.

54, 2009, p. 510.

56. O. Geil, C. Thommesen, "Book review of: Jørn Justesen and Tom Høholdt,A Course In Error-Correcting Codes," Newsletter of The EuropeanMathematical Society, March 2005, pp. 39--40.

57. O. Geil, C. Thommesen, "Book review of: Jørn Justesen and Tom Høholdt,A Course In Error-Correcting Codes," Matilde (newsletter for Dansk MatematiskForening), vol. 21, 2004, p. 27.

Miscellaneous:

58. O. Geil, actor in and screen writer for the film "Olav Geil:Fejlkorrigerende koder." 10 danske matematikere -- 10 matematiske fortællinger, L&R Uddannelse,2016. Available from https://www.youtube.com/watch?v=rIszlgH7Exw.

59. O. Geil, S. Martin, U. Martínez-Peñas, D. Ruano, "Refined analysisof RGHWs ofcode pairs coming from Garcia-Stichtenoth's second tower,"Proceedings of ACA2015-Applications of Computer Algebra, Kalamata, Greece 2015,5 pp. Available fromhttp://www.singacom.uva.es/~iremarquez/CACTC2015/CACTC-4.pdf.

60. O. Geil, "Two applications of the footprint (or Delta-set) bound :Estimation of generalized Hamming weights," by Olav Geil, poster atSpecial Semester on Gröbner Basesand Related Methods 2006, Workshop D1: GröbnerBases in Cryptography, CodingTheory and Algebraic Combinatorics, RadonInstitute for Computational and AppliedMathematics and Research Institute forSymbolic Computation, Linz, Austria,May 2006.

61. H. E. Andersen, O. Geil, "On the minimum distance of one-pointgeometric Goppa codes," in Proceedings of AGCT-10 : Arithmetique etTheorie de L'Information, CIRM, Luminy, 2005, Eds. F. Rodier and S. Vladut,2005, 2 pp.

62. O. Geil, "On some Gröbner Basis Theoretical Applications," inProceedings of the8th Nordic Combinatorial Conference, edited by Lars DØvlingAndersen and Olav Geil, Aalborg University 2004, pp. 59-64.

63. L. D. Andersen, O. Geil, editors of "Proceedings of the 8th NordicCombinatorialConference," Aalborg University 2004.

TALKS AND WORKSHOPS:

1. Invited lectures at PhD School. Algebraic Coding Theory Summer School2022 UZH,
University of Zurich, Switzerland, July 4--8, 2022

2. Invited talk. NORCOM 2019, Gentofte, August 5--7, 2019, ``Bounding thenumber of affine roots (with applications in communication theory)"

3. Invited talk. SIAM Conference on Applied Algebraic Geometry, AG 19. Bern,July 9--13, 2019 (presenting joint work with R. B. Christensen). ``Improvedsecret sharing schemes and quantum codes from the Hermitian curve"

4. Invited talk. Contemporary Coding Theory. MFO, Oberwolfach, March17--23, 2019. ``Bounding the number of affine roots (with appications in
communication theory and algebraic function field theory)"

5. Invited talk. Codes, Cryptology and Curves -- celebrating the influenceof R. Pellikaan. Eindhoven University of Technology, March 7--8, 2019 (presentingjoint work with K. H. Christensen) ``Exploring the order domain conditions"

6. Contributed talk. Engineer the Future at Folkemødet, Bornholm Denmark, June14-16, 2018 (Presenting the project SECURE with Astrid Oberborbeck Andersen). ``Smarte systemer ogpersonsikkerhed: Drøm eller mareridt?"

7. Invited talk. University of Zurich}}, March 21, 2018, (presenting jointwork with Carlos Galindo, Fernando Hernando and Diego Ruano, and joint workwith René B. Christensen). ``Optimized constructions of nested code pairs"

8. Contributed talk. 5th International Castle Meeting on Coding Theory andApplications, Vihula, Estonia, August 28-31, 2017. (Presenting joint work withFerruh Özbudak) "Bounding the minimum distance of affine variety codesusing symbolic computations of footprints."

9. Contributed talk. 5th International Castle Meeting on Coding Theory andApplications, Vihula, Estonia, August 28-31, 2017. (Presenting joint work withDaniel E. Lucani) "Random network coding over composite Fields."

10. Invited talk. SIAM Conference on Applied Algebraic Geometry Session MS86:Coding Theory. Georgia Institute of Technology, USA, July 31 - August 4, 2017.(Presenting joint work with Carlos Galindo, Fernando Hernando and Diego Ruano)"Improved construction of nested code pairs."

11. Invited talk. Meeting of the Catalan, Spanish, Swedish Math SocietiesSession 5: Numerical Semigroups and Applications.Umeaa University, Sweden, June12-15, 2017. (Presenting joint work with Kasper Halbach Christensen) "AGröbner basis approach for counting rational places in algebraic functionFields."

12. Contributed talk. SecretsTechnical University of Denmark, Lyngby, Denmark,November 14, 2016. "Improved constructions of nested code pairs."

13. Workshop organization (in collaboration with Peter Beelen).SecretsTechnical University of Denmark, Lyngby, Denmark, November 14, 2016.

14. Inaugural Lecture. Department of Mathematical Sciences, Aalborg University,August 30, 2016. "Bounding the number of affine roots -- with applicationsin reliable and secure communication"

15. Invited talk. On the Algebraic and Geometric Classifications of ProjectiveVarieties University of Messina, Italy, June 20--24, 2016. "Bounding thenumber of affine roots using algebraic methods."

16. Invited talk. Seminar at Jaume I University, Spain, June 3, 2016."Bounding the number of affine roots using algebraic methods."

17. Invited research stay. University Jaume I, Castellon, Spain, May 23 -- June3, 2016

18. Workshop participation. Symposium on the 60th birthday of Ivan DamgårdAarhus University, Denmark, April1-2, 2016

19. Invited talk. Information Meeting for The Danish National ResearchFoundation at Aalborg University, Denmark, February 3, 2016. With Tom Høholdt"Presentation of Danish-Chinese Center for Applications of AlgebraicGeometry in Coding Theory and Cryptography"

20. Workshop participation. DARNEC'15 Design and Application of Random NetworkCodes, Istanbul Technical University, Turkey, November 4--6, 2015

21. Workshop participation. The Seventh International Workshop on Coding andCryptography (WCC-2015) Paris, France, April 13--17, 2015.

22. Contributed talk. Workshop on Applications of Algebraic Geometry in SecretSharing and Coding Theory Aalborg University, Denmark, June 30, 2014.(Presenting joint work with Stefano Martin, Ryutaroh Matsumoto, Diego Ruano,and Yuan Luo) "Ramp secret sharing schemes from one-point AG codes."

23. Workshop organization. Workshop on Applications of Algebraic Geometry inSecret Sharing and Coding Theory Aalborg University, Denmark, June 30, 2014.

24. Contributed talk. IEEE Information Theory Workshop (ITW 2014) Hobart,Tasmania, Australia, November 2--5, 2014. (Presentation of joint work withStefano Martin, Ryutaroh Matsumoto, Diego Ruano and Yuan Luo) "Relativegeneralized Hamming weights of one-point algebraic geometric codes."

25. Workshop participation. 4th International Castle Meeting on Coding Theoryand Applications Castle of Palmela, Portugal, September 14--20, 2014

26. Workshop participation. NetCod 2014 -- International Symposium on NetworkCoding Aalborg University, Denmark, June 27--28. 2014

27. Invited talk. International Conference on Algebraic Geometry and CodingTheory Indian Institute of Technology, Bombay, Mumbai, India December 2--6,2013. "Affine variety codes are better than their reputation."

28. Invited talk. Special Semester on Applications of Algebra and Number TheoryAlgebraic Curves over Finite FieldsRICAM, Linz, Austria, November 11--15, 2013."Affine variety codes are better than their reputation."

29. Workshop participation. COST ConferenceGhent University, Belgium, September18--20 2013

30. Workshop organization(in collaboration with Diego Ruano). Meeting inDanish-Chinese Center for Applications of Algebraic Geometry in Coding Theoryand Cryptography, Klitgaarden, Skagen, Denmark, July 28--31 2013

31. Invited research stay. East China Normal University, Shanghai, China, April??--?? 2013

32. Invited talk. Meeting in Danish-Chinese Center for Applications ofAlgebraic Geometry in CodingTheory and Cryptography East China NormalUniversity, Shanghai, China, April ??--?? 2013. "The Feng-Rao boundsfor RGHW with applications in Secret Sharing"

33. Invited talk. Zürich COST MeetingUniversity of Zürich, Switzerland, June20--21, 2013. "On Success Probability in Random Network Coding (Areview)."

34. Invited talk. Mathematics of Information-Theoretic CryptographyLorenzCenter, Leiden, The Netherlands, May 21--25 , 2013. "Further improvementson the Feng-Rao bound for dual codes."

35. Invited talk. KIAS International Conference on Coding Theory andApplications KIAS, Seoul, Korea, November 15--17, 2012. "The Feng-Raobounds."

36. Workshop participation. Trends in Coding Theory Ascona, Switzerland, October28 -- November 2, 2012

37. Invited talk. Meeting in Danish-Chinese Center for Applications ofAlgebraic Geometry in CodingTheory and Cryptography Technical University ofDenmark, August 15--16 2012. (Presentation of joint work with RyutarohMatsumoto and Diego Ruano) "Feng-Rao decoding of primary codes."

38. Invited talk. Meeting in Danish-Chinese Center for Applications ofAlgebraic Geometry in Coding Theory and Cryptography East China NormalUniversity, May 19--26 2012. "One-point AG-codes from an affine-varietypoint of view."

39. Invited research stay. East China Normal University, Shanghai, China, May19--26 , 2012.33. Invited talk Basel University, Switzerland, March 19, 2012."n applications of the footprint bound (n <4)."

40. Invited research stay. Basel University, Switzerland March 16 -- 23, 2012.

41. Invited talk. Combinatorial, Algebraic and Algorithmic Aspects of CodingTheory Aspects of Coding Theory EPFL, Lausanne, Switzerland, July 25, 2011.(Presenting joint with Casper Thomsen) "Weighted Reed-Muller codesrevisited."

42. Workshop participation. The Seventh International Workshop on Coding andCryptography (WCC-2011) Paris, France, April 11--15, 2011.

43. Invited lectures. 3rd Soria Summer School in Computational MathematicsSoria,Spain July 12--16, 2010. Six hours lecture "Network Coding."

44. Workshop participation. 12th IMA International Conference on Cryptographyand Coding Cirencester, England, December 15--17, 2009

45. Invited workshop participation. Workshop on Sequences, Codes and CurvesAntalya, Turkey, September 25--29, 2009

45. Workshop participation. NetCod 2009 -- Internation Symposium on NetworkCoding EPFL, Lausanne, Switzerland, June 15--16 2009

46. PhD school organization and lectures (in collaboration with Max Sala).Summer Doctoral School: Gröbner Bases, Geometric Codes, and Order Domains,University of Trento, Italy, June 8--13, 2009

47. Invited talk. 4th Interdisciplinary Seminar on Applied Mathematics AalborgUniversity, Denmark, April 23, 2009. "Random Network Coding andError-Erasure Correction in Networks"

48. Invited lectures. International School and Conference on Coding TheoryCentro de Investigaciton en Matematicas (CIMAT), Guanajuato, Mexico, November28-- December 4, 2008. Five hours lecture: "Order domain codes and affinevariety codes."

49. Invited talk. Applications of Computer Algebra (ACA)RISC, Castle ofHagenberg, Austria, July 27--30, 2008. "On the second weight ofgeneralized Reed-Muller codes."

50. Workshop participation. International Workshop on the Arithmetic of FiniteFields WAIFI 08 University of Siena, Italy, July 6--9, 2008.

51. Session organization. Session: Coding TheoryEuropean Mathematical Society,Joint Mathematical Weekend University of Copenhagen, February 29 -- March 2, 2008

52. Invited talk. Thematic Seminar on Algebraic Geometry, Coding and ComputingUniversity of Valladolid, Segovia, Spain, October 8--10, 2007."Weierstrass semigroups and the number of rational places."

53. Contributed talk. Mini-workshop Error-correcting codes and network codingAalborg University, Denmark, September 19, 2007. "Weierstrass semigroupsand the number of rational places."

54. Workshop organization. Mini-workshop Error-correcting codes and networkcoding Aalborg University, Denmark, September 19, 2007

55. Invited talk. 2nd Interdisciplinary Seminar on Applied Mathematics AalborgUniversity, Denmark, October 25, 2006. "Affine Variety Codes"

56. Workshop participation. IMA workshop: Complexity, Coding, andCommunications University of Minnesota, USA, April 16--20, 2007.

57. Invited talk. Seminar Tokyo Institute of Technology, Japan, August 8, 2006."Generalizations of the Reed-Solomon Codes Via Gröbner Basis Theory."

58. Invited research stay. Tokyo Institute of Technology, Japan, Two weeks,August, 2006

59. Invited talk. KIAS-RIMS joint workshop on Computer Algebra. Kyoto, Japan,July 31 -- August 4, 2006. "Algebraic Geometry Codes in a Pure GröbnerBasis Theoretical Setting."

60. Invited poster. Special Semester on Gröbner Bases and Related Methods, 2006Workshop D1: Gröbner Bases in Cryptography, Coding Theory, and AlgebraicCombinatorics, Radon Institute for Computational and Applied Mathematics Linz,Austria, May 1--6, 2006. "Two applications of the footprint bound --estimation of generalized Hamming weights"

61. Invited talk. Special Semester on Gröbner Bases and Related Methods 2006,Workshop D1: Gröbner Bases in Cryptography, Coding Theory, and AlgebraicCombinatorics, Radon Institute for Computational and Applied Mathematics Linz,Austria, May 1--6, 2006. "Order Domain Codes"

62. Contributed talk. Applied Algebra, Algebraic Algorithms andError-Correcting Codes (AAECC-16)Las Vegas, NV, USA, February 20--24, 2006.(Presenting joint work with Christian Thommesen) "On the Feng-Rao boundfor generalized Hamming weights"

63. Invited talk. Arithmetic, Geometry, Cryptography and Coding Theory(AGCT-10) Centre International de Recongres Mathématiques (CIRM) Luminy(Marseile), France, September 26--30, 2005. "On the minimum distance ofone-point geometric Goppa codes."

64. Contributed talk. 8th Nordic Combinatorial Conference Aalborg University,Denmark, October 20--22, 2004. "On some Gröbner basis theoreticalapplications."

65. Conference organization (joint with L. D. Andersen). 8th NordicCombinatoral Conference Aalborg University, Denmark, October 20--22, 2004

66. Workshop participation. IEEE International Symposium on Information Theory(ISIT-2004) Chicago Downtown Marriot, Chicago, Illinois, USA, June 27 -- July2, 2004. "Codes from Order Domains."

67. Invited talk. Koderungstheorie, Mathmatisches ForschungsinstitutOberwolfach, Oberwolfach Germany, December 7--13, 2003. "On the MissingEvaluation Codes from Order Domain Theory."

68. Invited talk. Arithmetic, Geometry, Cryptography and Coding Theory (AGCT-9)Centre International de Recongres Mathématiques (CIRM), Luminy (Marseile),France, May 18--23, 2003. "Codes from order domains."

69. Contributed talk. IEEE International Symposium on Information Thoery(ISIT-2002) Palais de Beaulieu, Lausanne, Switzerland, June 30--July 5, 2002."A Class of Gröbner Basis Theoretically Based Evaluation Codes."

70. Contributed talk. Applied Algebra, Algebraic Algorithms andError-Correcting Codes (AAECC-14) Melbourne, Australia, November 26--30, 2001.(Presenting joint work with Tom Høholdt) "On hyperbolic codes"

71. Contributed talk. IEEE International Symposium on Information Theory(ISIT-2001) Omni Shoreham Hotel, Washington, D.C., USA, June 24--29, 2001.Codes from Order Domains."

72. Invited research stay. Technical University of Denmark, 1 week 2000

73. Invited talk. Combinatorical Theory SeminarTechnical University ofEindhoven, The Netherlands, February 17, 1999. "Evaluation Codesfrom order domains."

74. Invited talk. Torsdagsseminar Department of Mathematical Sciences, AalborgUniversity, Denmark, May 20, 1999. "Evaluation Codes and OrderDomains."

75. Invited talk. Coding Theory Days, DAIMI, Aarhus University, Denmark, August18--19, 1999. "Evaluation Codes and Order Domains."

76. Contributed talk. Winter School on Coding and Informatin Theory 1998 (IEEE)Ebeltoft, Denmark, December 13--16, 1998. "Evaluation Codes and OrderDomains."

77. Invited research stay. Technical University of Eindhoven, The Netherlands,April--July, 1998.

78. Contributed talk. Winter School on Coding and Information Theory 1996(IEEE) Mölle, Sweden, December15--18, 1996. "Presentation of PhDproject."

POPULARIZATION:

1. Leading part. ``Endelige legemer" AAU Play Video, https://www.youtube.com/watch?v=_XhAAAzf0vM

2. Leading part. The film project: "10 danske matematikere -- 10matematiske fortællinger 'Publishing house: Lindhardt og RinghofUddannelseProducer: Bjørn Grøn, Camera: David Binzer, 2016. "Olav Geil: Fejlkorrigerendekoder"

3. Invited lecture. Regionalmøde for matematiklærere ved gymnasialeuddannelser. Aalborg Studenter Kursus, Denmark, February 3, 2016. "Hvadgør man når høstakken er for stor?"

4. Invited lecture. Ungdommens Naturvidenskabelige Forening Aalborg, Denmark,October 14, 2014. "Hvis tal er sølv, så er mange slags tal guld."

5. Invited lecture. Møde for Matematiklrere i Nordjyske Region HasserisGymnasium, Aalborg, Denmark, November 11, 2008. "Fejlkorrigerende koder ogsecret sharing (samt kryptografi og netværkskodning."

6. Invited lecture. Elektronik og IT-Gruppen, Ingeniørforeningen i DanmarkAalborg, Denmark, April 24, 2008 "Moderne kryptografi."

7. Invited lecture. Møde for Matematiklærere i Viborg og Ringkøbing amterViborg Gymnasium, Denmark, November 7, 2006. "Fejlkorrigerende koder,secret sharing (og kryptografi)"

8. Invited lecture. Møde for Matematikundervisere på Seminarierne Brogården,Middelfart, Denmark, September 9, 2003. "Diskret Matematik."

9. Invited lecture. Ungdommens Naturvidenskabelige Forening Aalborg, Denmark,February 6, 2001. "Fejlkorrigerende koder."

10. Several invited lectures. Dronninglund Gymnasium (2002, 2004), Hjørring HTX(2003), Randers Statsskole (2003), Århus Katedralskole (2003, 2004), NørreSundby Gymnasium (2007), Vesthimmerlands Gymnasium (visiting AAU) (20The07),Frederikshavn HTX (2007). "Kodningsteori"