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Present Employment Department of Mathematics
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Curriculum Vitae

April 1945 Born in Copenhagen.
June 1963 High school degree from Rysensteen Gymnasium.
Feb 1966 – June 1968 Instructor at Mathematical Institute, University of Copenhagen.
June 1968 Cand. Scient. (Mathematics and Physics), University of Copenhagen.
July 1968 – April 1970 Amanuensis at Department of Mathematics, Technical University of Denmark.
April 1970 – Aug. 1971 Civil Service
Aug 1971 – Dec 1973 Amanuensis at Department of Mathematics, Technical University of Denmark.
Dec. 1973 – April 1988 Associate professor at Department of Mathematics, Technical University of Denmark.
April 1988 – - Docent at department of Mathematics, Technical University of Denmark.

Publications

Papers in International Journals

1. *Determinants of a class of Toeplitz Matrices* (w. J. Justesen). Math. Scand. 43, pp. 250–258, (1978).
2. *Ternary Sequences with perfect periodic autocorrelation* (w. J. Justesen). IEEE Trans.Inform. Theory vol 29 no.4 pp 597-600 , july 1983.
3. *Maxentropic Markov Chains* (w. J. Justesen). IEEE Trans. Inform. Theory vol. 30 no 4 pp 665-667 , july 1984. .
4. *Aperiodic Correlation and the Meritfactor of a class of Binary Sequences* (w. H. Elbrønd Jensen and J.Justesen). IEEE Trans. Inform. Theory vol. 31 no4 pp 549-553, july 1985.
5. *Autocorrelation properties of a class of infinite binary sequences* (w.H. Elbrønd Jensen and J. Justesen). IEEE Trans.Inform.Theory vol.32 no.3 pp 430-431, may 1986.
6. *Determination of the Meritfactor of Legendre Sequences* (w. H. Elbrønd Jensen). IEEE Trans. Inform. Theory vol. 34 no.1, pp 161-164, jan. 1988.
7. *Double series representations of bounded signals* (w. H. Elbrønd Jensen and J. Justesen). IEEE Trans. Inform. Theory vol. 34 no.4, pp 613-625, july 1988.
8. *Binary sequences with good correlation properties* (w. H. Elbrønd Jensen). Springer Lecture Notes in Computer Science vol.356, pp. 306-321, 1988.
9. *Construction and decoding of a class of algebraic geometry codes* (w. J.Justesen, K.J.Larsen, H. Elbrønd Jensen, A. Havemose). IEEE Trans. Inform. Theory vol. 35 no.4, pp 811-822, july 1989
This paper received the IEEE-IT best paper award in 1991
10. *The meritfactor of binary sequeces related to difference sets* (w. J. Møller Jensen and H. Elbrønd Jensen). IEEE Trans. Inform. Theory vol.37 no.3 pp 617-626, may 1991.

11. *Fast decoding of codes from algebraic plane curves* (w. J. Justesen, K.J. Larsen and H. Elbrønd Jensen). IEEE Trans. Inform. Theory vol.38 no.1 pp 111-120, jan. 1992 .
12. *On the number of correctable errors for some AG-codes curves* (w. J. Justesen and H. Elbrønd Jensen). IEEE Trans. Inform. Theory vol.39 no.2 pp. 681-684, march 1993.
13. *Fast decoding of codes from algebraic plane curves* (w. J. Justesen, K.J. Larsen and H. Elbrønd Jensen). IEEE Trans. Inform. Theory vol.38 no.1 pp 111-120, jan. 1992 .
14. *A fast Decoding Method of AG Codes from Miura-Kamia Curves C_{ab} up to half the Feng-Rao distance* (w. S. Sakata, J. Justesen, Y. Madelung and H. Elbrønd Jensen). Finite Fields and Their Applications vol.1. no.1 pp.83-101, july 1995.
15. *Fast Decoding of AG Codes up to the designed minimum distance* (w. S. Sakata, J. Justesen, Y. Madelung and H. Elbrønd Jensen). IEEE Trans. Inform. Theory vol.41 no.6 pp. 1672-1678, nov. 1995.
16. *A Family of Kummer Extensions of the Hermitian Function Field* (w. C. Voss). Communications in Algebra vol.23 no.4 pp. 1551-1566 , 1995.
17. *On the decoding of algebraic-geometric codes* (w. R. Pellikaan). IEEE Trans. Inform. Theory vol.41 no.6 pp. 1589-1615, nov. 1995.
18. *Generalized Berlekamp-Massey Decoding of Algebraic- Geometric Codes up to half the Feng-Rao bound* (w. S. Sakata and H. Elbrønd Jensen). IEEE Trans. Inform. Theory vol.41 no.6 pp.1762-1769, nov. 1995. **This paper received a Telecommunication System Engineering prize from the Telecommunications Advancement Foundation (Japan) in 1998**
19. *An explicit construction of a sequence of codes attaining the Tsfasman-Vladut-Zink bound. The first steps* (w. C. Voss). IEEE Trans. Inform. Theory vol.43 no.1 pp.128-136, jan. 1997.
20. *Fast Erasure and Error Decoding of Evaluation Codes* Proceedings of the 35th. annual Allerton Conference on Communication, Control and Computing pp. 229-231 1997.
21. *Fast Erasure and Error Decoding of Algebraic Geometry codes up to the Feng-Rao bound* (w. S. Sakata, D. Leonard and H. Elbrønd Jensen). IEEE Trans. Inform. Theory vol.44 no.4 pp.1558-1565, july 1998.
22. *Algebraic geometry codes* (w. J.H. van Lint and R. Pellikaan). Chapter 10 in Handbook of Coding Theory (eds. W.C. Huffmann, V. Pless) Elsevier 1998.
23. *Decoding Reed-Solomon Codes beyond half the minimum distance* (w. R. Refslund Nielsen). in Coding Theory, Cryptography and related areas (J. Buchmann, T. Høholdt, H. Stichtenoth, H. Tapia-Recillas eds.) Springer 2000 pp. 221-236.
24. *On (or in) the Blahut Footprint* in Codes, Curves and Signals (A. Vardy ed.) Kluwer 1998 pp3-8.
25. *Performance Analysis of a decoding algorithm for algebraic geometry codes* (w. R. Refslund Nielsen and H. Elbrønd Jensen). IEEE Trans. Inform. Theory vol.45 no.5 pp. 1712-1717 , july 1999.
26. *Algebraic Geometry Codes* (w. I. Blake, C. Heegaard and V. Wei). IEEE Trans. Inform. Theory vol.44 no.6 pp.2596-2618 , sept. 1998
27. *An elementary approach to algebraic geometry codes* (w. J.H. van Lint and R. Pellikaan). Congr. Num. 135 pp25-35 1998.

28. *The Meritfactor of Binary Sequences in Difference Sets, Sequences and their Correlation Properties* (Bad Windsheim 1998) NATO Adv.Sci.Inst.Ser.C Math.Phys.Sci. 542 pp.227-237 Kluwer 1999.
29. *Decoding Hermitian Codes with Sudan's Algorithm* (w. R. Refslund Nielsen). Springer Lecture Notes in Computer Science vol.1719 pp. 260-270 2000.
30. *Footprints or generalized Bezout's theorem* (w. O. Geil). IEEE Trans.Inform.Theory vol.46 no 2 pp. 635-641 march 2000
31. *Bounds on List Decoding of MDS Codes* (w. J. Justesen). IEEE Trans. Inform. Theory vol.47 no.3 pp 1604-1610, may 2001.
32. *On Hyperbolic Codes* (w. O. Geil). Springer Lecture Notes in Computer Science vol. 2227 pp.159-171 december 2001 (AAECC-14).

Other Papers

1. *Curves and surfaces with constant radial subnormal* Nordisk Matematisk Tidsskrift vol.18 pp36-44 1970.
2. *The mathematics behind the world-cup final in Speedway* Nordisk Matematisk Tidsskrift vol.25/26 pp.79-84 1978.
3. *The mathematics behind the bridgetournaments* (w. K. Grunbaum). NORMAT 29(2) pp.75-84 1981.
4. *Modern Hjelmslev Geometry* NORMAT 33(4) pp.166-168 1985.
5. *Mathematics for Theoretical Computer Science* European Journal of Engineering Education vol. 10 3/4 pp. 357-360 1985.
6. *On the Sum of Matroids* (w. J. Clausen). MAt, DTU 1975 accepted for publication in Discrete Mathematics.
7. *Repræsentation af Matroider I Matroideteori* (F. Nielsen ed.) MAT 1976.
8. *Completion of a class of Howell Rotations* (w. K. Grunbaum)Mat-report no.54 1980.
9. *The difference equation $x_{k+1} = 1 - \frac{a}{x_k}$* (w. B. Branner). Mat-report no.68 1980.
10. *Proceedings of the 7th Nordic Conference on teaching mathematics at Technical Universities* editor w. M.P.Bendsøe.
11. *Discrete Mathematics in Engineering Education* (w. R. Chrichtly, N. Steele, I. Larsen).SEFI report 1988.
12. *On the Second Step in Sudan's List Decoding Algorithm* MAT-Report 2002-19 (w. H. Elbrønd Jensen) December 2002
13. *On Hyperbolic Type Codes* preprint Aalborg University November 2002. (w. Olav Geil)
14. *Fejlrettende Koder* Matilde nr.12 march 2002 p. 4
15. *Nevanlinna Prisen 2002* Matilde nr.14 October 2002 p. 13

Books

1. *Kombinatorik med anvendelser* (w. K. Grunbaum). MAT 1981.

2. *Lineære Differentialligninger* (w. H. Elbrønd Jensen and F. Nielsen). MAT 1984.
3. *Lineære Systemer* (w. H. Elbrønd Jensen and F. Nielsen). MAT 1993.
4. *Grundlæggende Matematik for Dataloger* (w. H. Elbrønd Jensen). MAT 1993.
5. *Coding Theory, Cryptography and Related Areas* (co-editor w. J. Buchmann, H. Stichtenoth and H. Tapia- Recillas) Springer 1999
6. *Grundlæggende Matematik* (w. H. Elbrønd Jensen). MAT 2000
7. *Applied Algebra, Algebraic Algorithms and Error-Correcting Codes* Springer Lecture Notes in Computer Science Vol.2643 (editor with A. Poli and M. Fossorier) spinger 2003
8. *A Course in Error Correcting- Codes* EMS-Textbooks in Mathematics Vol.1 Febr.2004 (w. J. Justesen)

Japanese edition of the above October 2005.

Assesment committees

Full Professors

1. In Electrical Engineering at University of Illinois at Urbana Champaign, USA.
2. In Mathematics at Auburn University Alabama, USA.
3. In Mathematics at University of Cork, Ireland.
4. In Mathematics at the Chinese Academy of Science, China

Ph.d.'s

1. Aarhus University, Denmark
2. Aalborg University, Denmark
3. Linkoebing University, Sweden
4. University of Lund, Sweden
5. University of Bergen, Norway
6. University of Essen, Germany
7. Cork University, Ireland
8. Universite Paris VII, France
9. Universite de Guadeloupe, France
10. Universidad de Valladolid, Spain

Referee and editorial activities

Associate Editor for Coding Theory IEEE Trans. Inform. Theory jan.1994-dec.1996.

Co-editor Special issue of Discrete Applied Mathematics 2001, 2003and 2005

Member of scientific committee WCC 2001, 2003 and 2005

Member of conference committee AAEECC

Member of scientific committee IEEE-ISIT 2002,2003 , 2004

Member of scientific committee SETA-04 Referee for

1. Math.Scand.
2. IEEE Trans. Inform.Theory.
3. Journal of Graph Theory
4. Journal of Optimization and its Applications.
5. BIT
6. SIAM Journal of Discrete Mathematics
7. Journal of Pure and Applied Algebra
8. AAECC
9. Finite Fields and its Applications
10. Codes, Designs and Cryptography
11. Journal of Linear Algebra and Applications

Ph.d students

1. B. Petersen 1980
2. P.Moeller Jensen 1982
3. A. Havemose 1989
4. C. Dahl Frehr 1991
5. J.P.Petersen 1992
6. T.Jacobsen 1999
7. A Heydtmann 2000
8. R. Refslund Nielsen 2001

Honors

Fellow IEEE jan.2000

G.A.Hagemanns Goldmedal may 2000

Mitglied des wissenschaftlichen Beirat des Instituts fuer Experimentelle Mathematik Universitaet Essen
Germany july 2001-

Conference Participation with presentation of Papers

1. CIME: Finite Geometric Structures and Their applications, Bressanone Italy 1972.
2. VIII Oestereicher Matematikerkongress , Wien Austria 1973
3. NATO Advanced Study Institute: Higher Combinatorics Berlin, Germany 1976
4. 4th Nordic Conference on Mathematics in Engineering Education,Trondheim Norway 1979
5. 5th Nordic Conference on Mathematics in Engineering Education,Reykjavik Iceland 1981
6. IEEE International Symposium on Information Theory, Les Arcs France 1982
7. 6th Nordic Conference on Mathematics in Engineering Education,Tampere Finland 1983

8. 2. European SEFI Conference on Mathematical Education of Engineers, Copenhagen Denmark 1985
9. IEEE International Symposium on Information Theory, Brighthelm England 1985
10. 4. European SEFI Conference on Mathematical Education of Engineers, Goeteborg Sweden 1987
11. 3th Nordic Symposium on Combinatorics , Tampere Finland 1987
12. AAECC-5, Menorca Spain 1987
13. 7th Nordic Conference on Mathematics in Engineering Education, Aalborg Denmark 1987
14. 5th. European SEFI Conference on Mathematical Education of Engineers, Plymouth England 1988
15. AGCT-2 , Luminy France 1989
16. 4th Joint swedish-Soviet international workshop on Information Theory, Gotland Sweden 1989
17. International Conference” Discrete Mathematics “ Eisenach DDR 1990.
18. 4th Nordic Symposium on Discrete Mathematics , Frederikshavn Denmark 1990
19. II International Workshop on Algebraic and Combinatorial Coding Theory Leningrad USSR 1990.
20. AGCT-3, Luminy France 1991
21. IEEE International Symposium on Information Theory, Budapest Hungary 1991
22. IEEE Workshop on Information Theory, Bahia Brazil 1992
23. Symposium ; Discrete Mathematics , Eindhoven Holland 1992
24. AMS-MAA joint Mathematics Conference, San Antonio USA 1993
25. IEEE International Symposium on Information Theory, San Antonio USA 1993.
26. AGCT-4 , Luminy France 1993
27. 6th Joint swedish-Soviet international workshop on Information Theory, Moelle Sweden 1993
28. Mathematics in Engineering Education , Goeteborg Sweden 1994
29. Mathematical Breakthroughs in the 20th century (Invited speaker) Farmingdale USA 1994
30. IEEE International Symposium on Information Theory,(Member of Scientific Committee) , Trondheim Norway 1994
31. IEEE Workshop on Information Theory, Moscow Russia 1994
32. AGCT-5 (Organizer), Luminy France 1995
33. IEEE International Symposium on Information Theory (Session Chairman), Whistler Canada 1995
34. Coding Theory Cryptography and Datasecurity, Cambridge, England 1996
35. Information Theory Workshop Oberwolfach Germany 1996
36. Colloque International de Pointe a Pitre , Guadeloupe (Member of Scientific Committee) France 1996.

37. IEEE Winterschool on Information Theory (Principal Lecture) Moelle Sweden 1996
38. AAECC-12 (Invited speaker) Toulouse France 1997
39. AGCT-6 Luminy France 1997
40. IEEE International Symposium on Information Theory (Member of Scientific Committee) Ulm Germany 1997
41. IEEE Workshop on Information Theory Svalbard Norway 1997
42. Blahutfest(Invited speaker) Urbana Champaign USA 1997
43. 35th Annual Allerton Conference on Communication, Control and Computing (Invited speaker) Allerton USA 1997
44. International Conference on Coding Theory, Cryptograpy and Related Areas (Invited speaker) Guanajuato Mexco 1998
45. IEEE Workshop on Information Theory (Session organizer) Killarney Ireland 1998.
46. NATO Advanced Study Insitute on Difference sets, sequences and their correlation properties (Invited speaker) Bad Windsheim Germany 1998
47. IEEE International Symposium on Information Theory Boston USA 1998
48. AAECC-13 (Invited speaker, member of scientific committee) Hawaii USA 1999
49. 1999 IEEE International Symposium on Information Theory (Invited speaker) Metsovo, Greece 1999
50. AGCT-7 (Invited speaker) Luminy France 1999
51. International Workshop on Coding Theory and Cryptography (Invited speaker) Medina del Campo Spain 1999
52. Kodierungstheorie und Kryptografie(Invited speaker) Oberwolfach Germany 2000
53. IEEE International Symposium on Information Theory Sorento Italy 2000
54. EIDMA workshop on Coding Theory (Invited speaker) Eindhoven Holland 2000
55. GraduiertenKollegium (Invited speaker) Essen Germany 2000
56. IEEE Winterschool on Information Theory Ulm Germany 2000
57. Workshop on Coding Theory and Complexity (Invited speaker) IAS Princeton USA 2001.
58. AGCT-8(invited speaker) Luminy France 2001
59. Blakefest (Invited speaker) Victoria Canada 2001.
60. IEEE International Symposium on Information Theory, Washington USA 2001 (Session Chairman)
61. AAECC-14 Melbourne, Australia December 2002.(Confence Co-Chair).
62. IEEE International Symposium on Information Theory, Lausanne, Switzerland. (Session chairman, member of scientific committee) July 2002
63. Workshop on Algebra and Communication, Ecole Polytechnique Federale de Lausanne, Switzerland Jan. 2003 (invited speaker).

64. AAECC-15 Toulouse , France May 2003 (Conference co-chair)
65. AGCT-9, Luminy France May 2003 (invited speaker).
66. IEEE International Symposium on Information Theory, Yokohama July 2003 (session chairman, member of scientific committee)
67. Algebraic Coding Theory, Oberwolfach, Germany (invited speaker)
68. Workshop on Information-and Coding Theory (organizer) Denmark Jan.2004.
69. IEEE International Symposium on Information Theory, Chicago USA July 2004 (member of scientific committee, session chairman)
70. IEEE workshop on Information Theory, Roturoa, New Zealand Sept. 2005
71. IEEE International Symposium on Information Theory, Adelaide, Australien Sept. 2005

Lectures at other Universities

1. Coventry Polytechnic, England 1988 and 1993.
2. NIHE- Limerick , Ireland 1988
3. TH Ilmenau, DDR 1988
4. Universitaet Essen, Germany 1989 and 2000
5. University of Turku, Finland 1989 and 1999.
6. Universidad de Valladolid, Spain 1996, 1997, 1999 and 2004
7. Eindhoven University, Holland 1995, 1996 and 1998.
8. Waseda University Japan 1999
9. Tokio Institute of Technology Japan 1999
10. The University of Electrocommunications Japan 1999
11. Kyoto Institute of Technology Japan 1999.
12. Institute of Advanced Studies Princeton USA 2001
13. NSA USA 2001
14. Bergen University Norway March 2002
15. The University of Electrocommunication Tokyo Japan July 2003
16. Roskilde University December 2003
17. Universidad de Pays Basque, Bilbao december2004

Other

Studieleder ved Folkeuniversitetes liniestudium i Matematik.