

**Research Papers on Mathematics** (including working papers not published elsewhere)

**1969**

Rectangulations. *Proc. Cambridge Philos. Soc.* 65 (1969) 399-408.

**1971**

Intersection matrices for linear graphs. In: *Combinatorial Mathematics and its Applications* (ed. D.J.A. Welsh), Academic Press (1971) 15-23.

Spanning trees of dual graphs. *J. Combinatorial Theory (B)* 11 (1971) 127-131.

Automorphisms of imbedded graphs. *J. Combinatorial Theory (B)* 11 (1971) 132-138.

On trivalent graphs (with D.H. Smith). *Bull. London Math. Soc.* 3 (1971) 155-158.

Classification of complete maps on orientable surfaces. *Rendiconti di Matematica (Roma)* 4 (1971) 645-655.

**1972**

Recursive families of graphs (with R.M. Damerell and D.A. Sands). *J. Combinatorial Theory (B)* 12 (1972) 123-131.

Cayley maps and symmetrical maps. *Proc. Cambridge Philos. Soc.* 72 (1972) 381-386.

On the symplectic representation of map automorphisms. *Bull. London Math. Soc.* 4 (1972) 303-306.

An edge-colouring problem. *Amer. Math. Monthly* 79 (1972) 1018-1020.

Pictures. In: *Combinatorics* (D.J.A. Welsh and D.R. Woodall eds.), Institute of Mathematics and its Applications (1972) 1-17.

**1973**

Three remarkable graphs. *Canadian J. Math.* 25 (1973) 397-411.

Expansions of the chromatic polynomial. *Discrete Mathematics* 6 (1973) 105-113.

Perfect codes in graphs. *J. Combinatorial Theory (B)* 15 (1973) 289-296.

## 1974

On the symmetry of line graphs. *Utilitas Math.* 5 (1974) 113-121.

Perfect codes and distance-transitive graphs. In: *Combinatorics* (V.C. Mavron and T. McDonough eds.), L.M.S. Lecture Note Series, No. 13 (1974) 1-8.

## 1975

Designs, factors and codes in graphs. *Quart. J. Math. (Oxford)* 26 (1975) 113-119.

A theorem on planar partitions (with G.H.J. Meredith). *Proc. Fifth British Combinatorial Conference* (1975) 73-78.

## 1976

Approximations for chromatic polynomials (with G.H.J. Meredith). *J. Combinatorial Theory (B)* 20 (1976) 5-19.

Automorphic graphs and the Krein condition. *Geometriae Dedicata* 5 (1976) 117-127.

On the duality of interaction models. *Math. Proc. Cambridge Philos. Soc.* 80 (1976) 429-436.

## 1977

Colouring square lattice graphs *Bull. London Math. Soc.* 9 (1977) 54-56.

## 1978

Cluster expansions in graph theory and physics. *Quart. J. Math. (Oxford)* 29 (1978) 159-174.

## 1979

On the algebra of graph types. In: *Graph Theory and Related Topics* (J.A. Bondy and U.S.R. Murty eds.), Academic Press (1979) 81-89.

Some odd graph theory. *Annals of the New York Academy of Sciences* 319 (1979) 71-81.

Resonance and reconstruction. In: *Surveys on Combinatorics* (B. Bollobas ed.), Cambridge University Press (1979) 1-21.

## 1980

Girth, valency and excess. *Linear Algebra and its Applications* 31 (1980) 55-59.

Graphs with even girth and small excess (with T. Ito). *Math. Proc. Cambridge Philos. Soc.* 88 (1980) 1-10.

A trivalent graph with girth 9 and 58 vertices (with M. Hoare). *Discrete Math.* 30 (1980) 299-301.

## 1981

Aspects of symmetry in graphs. In: *Algebraic Methods in Graph Theory* (L. Lovász and V. Sos eds. ), North-Holland (1981) 27-35.

Covering biplanes. In: *Theory and Applications of Graphs* (G. Chartrand ed.), Wiley (1981) 73-82.

Covering graphs and symmetric designs (with T. Ito). In: *Finite Geometries and Designs* (P.J. Cameron ed.), Cambridge University Press (1981) 40-51.

## 1982

Excess in vertex-transitive graphs. *Bull. London Math. Soc.* 14 (1982) 52-54.

Distance-regular graphs with diameter 3. *North-Holland Mathematics Studies* 65 [= *Annals of Discrete Mathematics* 15] (1982) 69-80.

Constructing 5-arc-transitive cubic graphs. *J. London Math. Soc. (2)* 26 (1982) 193-200.

A new 5-arc-transitive cubic graph. *J. Graph Theory* 6 (1982) 447-451.

## 1983

The sextet construction for cubic graphs (with M.J. Hoare). *Combinatorica* 3 (1983) 153-165.

## 1984

Presentations for cubic graphs. In: *Computational Group Theory* (M.D. Atkinson ed.), Academic Press (1984) 57-63.

Homological coverings of graphs. *J. London Math. Soc. (2)* 30 (1984) 1-14.

Rotations and graphs of large girth (with J. Shawe-Taylor). In: *Geometrical Combinatorics* (F.C. Holroyd and R.J. Wilson eds.), Pitman (1984) 1-9.

**1985**

Infinite coverings of cages (with S.K. Burford). *European J. Combinatorics* 6 (1985) 7-12.

**1986**

Cubic distance-regular graphs (with A.G. Boshier and J. Shawe-Taylor) *J. London Math. Soc.* (2) 33 (1986) 385-394.

**1988**

The spectral radius of infinite graphs (with B. Mohar and J. Shawe-Taylor) *Bull. London Math. Soc.* 20 (1988) 116-120.

Girth and residual finiteness. *Combinatorica* 8 (1988) 307-312.

Graphs with large girth. *Ars Combinatoria* 25-C (1988) 73-80.

**1989**

Cubic graphs with large girth. *Annals of the New York Academy of Sciences* 555 (1989) 56-62.

Confluence of some presentations associated with graphs. *Discrete Math.* 75 (1989) 41-46.

A proof of Serre's theorem. *Discrete Math.* 78 (1989) 55-57.

The growth rate of the harmonious chromatic number (with D. Beane and B.J. Wilson/). *J. Graph Theory* 13 (1989) 291-299.

## 1990

Note on the girth of Ramanujan graphs (with A.G. Boshier). *J. Combinatorial Theory (B)* 49 (1990) 190-194.

Some heuristics for graph colouring. In: *Graph Colourings* (R. Nelson and R.J. Wilson eds.), Pitman Research Notes in Mathematics 218, Longmans (1990) 87-96.

Learnability and formal concept analysis (with M.H.G. Anthony and J. Shawe-Taylor). *RHBNC Technical Report* CSD-TR-624, June 1990.

\*The learnability of formal concepts (with M.H.G. Anthony and J. Shawe-Taylor). *Proceedings of the Workshop on Computational Learning Theory*, Morgan-Kaufmann, San Mateo Ca. (1990) 246-257.

## 1992

Learning algorithms: theory and practice. In: *Neural Network Applications* (J.G. Taylor ed.), Springer (1992) 1-11.

Theoretical and practical studies of a competitive learning process (with G.R. Brightwell and D. Tsoubelis). *Network* 3 (1992) 285-301.

A framework for cumulative learning. *Mathematics Preprint Series* LSE-MPS-27, London School of Economics (1992).

## 1993

Bounding sample size with the Vapnik-Chervonenkis dimension (with M.H.G. Anthony and J. Shawe-Taylor). *Discrete Applied Mathematics* 42 (1993) 65-73.

The mean chromatic number of paths and cycles (with M.H.G. Anthony). *Discrete Mathematics* 120 (1993) 227-231.

Computational learning theory for artificial neural networks (with M.H.G. Anthony). In: *Mathematical Approaches to Neural Networks* (J.G. Taylor ed.), North-Holland (1993) 25-62.

Discrete Mathematics in Finance: Two Applications. *Mathematics Preprint Series* LSE-MPS-49, London School of Economics, 1993.

Potential theory on distance-regular graphs. *Combinatorics, Probability and Computing* 2 (1993) 243-255.

## 1994

Combinatorics and connectionism. *Discrete Math.* 124 (1994) 19-36.

Exchange rate networks and mechanisms. *Mathematics Preprint Series* LSE-MPS-64, London School of Economics, December 1993, revised May 1994.

\*PAC learning and artificial neural networks (with M.H.G. Anthony). In: *The Handbook of Brain Theory and Neural Networks*, M.A. Arbib ed.) Bradford/MIT Press (1994).

Exchange rates and the matrix-tree theorem. *Theoretical Economics Discussion Papers* TE/94/273, London School of Economics, 1994.

How to compute the spectral density of a lattice and its quotients. *Mathematics Preprint Series* LSE-MPS-74, London School of Economics, October 1994.

## 1995

The spectral density of covering lattices. *Mathematics Preprint Series* LSE-MPS-78, London School of Economics, January 1995.

A computational learning theory view of economic forecasting with neural nets (with M.H.G. Anthony). In: *Neural Networks in the Capital Markets* (A.Refenes ed.), Wiley (1995) 77-98.

Algorithms for learning and coloring. In: *Graph Theory, Combinatorics and Applications* (Y. Alavi and A. Schwenk eds.), Wiley (1995) 63-70.

The potential of potential theory. *LSE Mathematics Preprint Series*, LSE-MPS-91, September 1995.

## 1996

Chip-firing on distance-regular graphs. *CDAM Research Report Series* LSE-CDAM-96-11, June 1996.

## 1997

International Finance. In: *Graph Connections* (L.W. Beineke and R.J. Wilson eds.), Oxford University Press (1997) 261-279.

Chip-firing and the chromatic polynomial (with P. Winkler). *CDAM Research Report Series* LSE-CDAM-97-03, February 1997.

Integer programming techniques for the frequency assignment problem. *CDAM Research Report Series* LSE-CDAM-97-06, April 1997.

Algebraic potential theory on graphs. *Bull. London Math. Soc.* 29 (1997) 641-682

## 1998

Constructions for cubic graphs with large girth. *Electronic Journal of Combinatorics* 5 (1998) A1.

Optimising the signal-to-noise ratio (with D Fon der Flaass). *CDAM Research Report Series* LSE-CDAM-98-16, August 1998.

## 1999

Chip-firing and the critical group of a graph. *J. Algebraic Combinatorics* 9 (1999) 25-45.

The Tutte polynomial as a growth function. *J. Algebraic Combinatorics* 10 (1999) 115-133.

The chromatic polynomial of the  $3 \times n$  toroidal square lattice. *CDAM Research Report Series* LSE-CDAM 99-05, June 1999.

$T=0$  partition functions for Potts antiferromagnets on square lattice strips with (twisted) periodic boundary conditions (with R. Shrock). *J. Phys. A.* 32 (1999) L489-L493.

## 2000

A matrix method for chromatic polynomials – II. *CDAM Research Report Series* LSE-CDAM 2000-04, April 2000.

The chromatic roots of generalised dodecahedra (with P. Reinfeld). *CDAM Research Report Series* LSE-CDAM 2000-07, June 2000.

Equimodular Curves. *CDAM Research Report Series* LSE-CDAM 2017, September 2000.

## 2001

Equimodular curves for reducible matrices *CDAM Research Report Series* LSE-CDAM 2001-01, January 2001.

A matrix method for chromatic polynomials. *J. Combinatorial Theory (B)* 82 (2001) 19-29.

## 2002

Chromatic polynomials for twisted bracelets. *Bull. London Math. Soc.* 34 (2002) 129-139.

Chromatic polynomials and representations of the symmetric group. *Linear Algebra and its Applications* 356 (2002) 3-26.

Equimodular curves. *Discrete Mathematics* 259 (2002) 37-57.

## 2004

Algebraic methods for chromatic polynomials (with M. H. Klin and P. Reinfeld). *European J. Combinatorics* 25 (2004) 147-160.

Specht modules and chromatic polynomials. *J. Combinatorial Theory (B)* 92 (2004) 359 - 377.

## 2005

Chromatic polynomials of some families of graphs I: Theorems and Conjectures. *CDAM Research Report Series* LSE-CDAM 2005-09, May 2005.

## 2007

The critical group from a cryptographic perspective. *Bull. London Math. Soc.* 39 (2007) 829-836.



## **2008**

Chromatic roots of the Quartic Möbius Ladders. *CDAM Research Report Series* LSE-CDAM 2008-05.

A matrix method for flow polynomials. *CDAM Research Report Series* LSE-CDAM 2008-08.

## **2009**

Strongly regular graphs with no triangles. *arXiv*: 0911.2160v1, 11 November 2009.

Families of parameters for SRNT graphs. *arXiv*: 0911.2455v1, 12 November 2009.

## **2010**

The second subconstituent of some strongly regular graphs. *arXiv*: 1003.0175v1, 28 February 2010

Tutte polynomials of bracelets. *J. Algebraic Combinatorics* 32 (2010) 389-398.

## **2011**

Some properties of strongly regular graphs. *arXiv*: 1106.0889v1, 5 June 2011.

## **2015**

Applications of integer programming methods to cages (with F. de Ruyter). *Electronic J. of Combinatorics* 22(4) (2015) #P4.35.

## **2017**

Chromatic polynomials and toroidal graphs. *Australasian Journal of Combinatorics* 67(2) (2017) 235-242.