Stephen M. Buckley: Preprints and Publications

Research preprints

1. *Distributive algebras, isoclinism, and invariant probabilities.*
2. with D. MacHale and Á. Ní Shé, *Finite rings with many commuting pairs of elements.*
3. with D. MacHale, *Contrasting the commuting probabilities of groups and rings.*
4. with D. MacHale, *Finite rings with many idempotents.*
5. with D. MacHale, *Odd order rings with many idempotents.*
6. with D. MacHale, *Groups with commuting probability 1/3.*
7. with Yu. Zelenyuk, *Polynomial product semigroups and ring commutativity.*
8. *Isoclinism and weak isoclinism invariants.*
9. with A. O'Farrell, *Wiring switches to lightbulbs.*
10. with A. O'Farrell, *Wiring switches to lightbulbs II.*
11. with D. MacHale and Á. Ní Shé, *Degree sum deficiency in finite groups.*
12. *Commuting probabilities of quasigroups.*

Books

13. *Codaigh agus córais dhinimiciúla réadacha*, Logic Press, June 2006; ISBN 0-9544269-5-9.
14. *Fractals and real dynamical systems*, Logic Press, June 2006; ISBN 0-9544269-6-7.
15. *Harmonic analysis on weighted spaces*, Dissertation, Univ. of Chicago, 1990.

Research papers (published or in press)

16. with D. MacHale, *Rings with ideal centres*, Sci. Math. Jpn., to appear.
17. with K. Falk, *The boundary at infinity of a rough CAT(0) space*, Anal. Geom. Metric Spaces, to appear.
18. with D. MacHale, *A characterization of commutator-forcing polynomials*, Math. Proc. R. Ir. Acad., to appear.
19. with D. MacHale and Yu. Zelenyuk, *Finite rings with large anticommuting probability*, Appl. Math. Inf. Sci. **8** (2014), 13–25.
20. *Minimal order semigroups with specified commuting probability*, Semigroup Forum, 2013, (DOI) 10.1007/s00233-013-9530-7.
21. with D. MacHale, *Conjugate deficiency in finite groups*, Bull. Irish Math. Soc. **71** (2013), 13–19.
22. with R. Hurri-Syrjänen, *Iterated log-scale Orlicz-Hardy inequalities*, Ann. Acad. Sci. Fenn. Math. **38** (2013), 757–770.
23. with S. Hamza, *Best constants for metric space inversion inequalities*, Cent. Eur. J. Math. **11** (2013), 865–875.
24. with K. Falk, *Natural maps between CAT(0) boundaries*, New York J. Math. **19** (2013), 13–22.
25. with D. MacHale, *Variations on a theme—rings satisfying $x^3 = x$ are commutative*, Amer. Math. Monthly **120** (2013), 430–440.

26. with D. MacHale, *Polynomials that force a unital ring to be commutative*, Results Math. **64** (2013) 59–65.

27. with D. MacHale, *Z-polynomials and ring commutativity*, Math. Proc. R. Ir. Acad. **112A** (2012), 51–57.

28. with B. Hanson, *The n-point condition and rough CAT(0)*, Anal. Geom. Metric Spaces **1** (2012), 58–68.

29. with D. MacHale, *Small rings without ideal centres*, Bull. Irish Math. Soc. **70** (2012), 41–49.

30. with D. MacHale, *Powers of commutators and anticommutators*, ISRN Algebra **2012** (2012), Art. ID 302524, 1–6, (DOI) 10.5402/2012/302524.

31. with D. MacHale, *Centrifiers and ring commutativity*, J. Math. Sci. Adv. Appl. **15** (2012), 139–161.

32. with K. Falk, *Rough CAT(0) spaces*, Bull. Math. Soc. Sci. Math. Roumanie **55 (103)** (2012), 3–33.

33. with S.L. Kokkendorff, *The spherical boundary and volume growth*, ISRN Geometry **2012** (2012), Art. ID 484312, 1–13.

34. with A. Diatta and A. Stanoyevitch, *Distinguishing properties of weak slice conditions II*, Int. J. Pure Appl. Math. **71** (2011), 83–98.

35. *Nonpositive curvature and complex analysis*, Contemp. Math. **525** (2010), 43–83.

36. with J. MacDougall and D.J. Wraith, *On Ptolemaic simplicial complexes*, Math. Proc. Cambridge Phil. Soc. **149** (2010), 93–104.

37. with K. Falk and D.J. Wraith, *Ptolemaic spaces and CAT(0)*, Glasgow Math. J. **51** (2009), 301–314.

38. with S.L. Kokkendorff, *Comparing the Floyd and ideal boundaries of a metric space*, Trans. Amer. Math. Soc. **361** (2009), 715–734.

39. with S.L. Kokkendorff, *Detours and Gromov hyperbolicity*, Int. J. Pure Appl. Math. **47** (2008), 313–323.

40. with D. Vukotić, *Univalent interpolation in Besov spaces and superposition into Bergman spaces*, Potential Anal. **29** (2008), 1–16.

41. with S.L. Kokkendorff, *Warped products and conformal boundaries of CAT(0) spaces*, J. Geom. Anal. **18** (2008), 704–719.

42. with D. Herron and X. Xie, *Metric space inversions, quasihyperbolic distance, and uniform spaces*, Indiana U. Math. J. **57** (2008), 837–890.

43. with D. Herron, *Uniform spaces and weak slice spaces*, Conform. Geom. Dyn. **11** (2007), 191–206.

44. with D. Herron, *Uniform domains and capacity*, Israel J. Math. **158** (2007), 129–157.

45. with P. Koskela, *Ends of metric measure spaces and Sobolev inequalities*, Math. Z., **252** (2006), 275–285.

46. with D. Vukotić, *Superposition operators and the order and type of entire functions*, Contemp. Math. **393** (2006), 51–58.

47. with J. Björn and S. Keith, *Admissible measures in one dimension*, Proc. Amer. Math. Soc., **134** (2006), 703–705.

48. with Z. Balogh, *Sphericalization and flattening*, Conform. Geom. Dyn. **9** (2005), 76–101.

49. *Relative solidity for spaces of holomorphic functions*, Math. Proc. R. Ir. Acad. **104A** (2004), 83–97.

50. with P. Koskela, *Orlicz-Hardy Inequalities*, Illinois J. Math., **48** (2004), 787–802.

51. *Quasiconformal images of Hölder domains*, Ann. Acad. Sci. Fenn. Math. **29** (2004), 21-42.

52. *Slice conditions and their applications*, Rep. Univ. Jyväskylä Dep. Math. Stat. **92** (2003), 63–76.

53. with Z. Balogh, *Geometric characterizations of Gromov hyperbolicity*, Invent. Math. **153** (2003), 261–301.

54. with A. Stanoyevitch, *Distinguishing properties of weak slice conditions*, Conform. Geom. Dyn. **7** (2003), 49–75.

55. with J.L. Fernández and D. Vukotić, *Superposition operators on Dirichlet type spaces*, Rep. Univ. Jyväskylä Dep. Math. Stat. **83** (2001), 41–61.

56. with A. Stanoyevitch, *Weak slice conditions and Hölder imbeddings*, J. London Math. Soc., **66** (2001), 690–706.

57. with A. Stanoyevitch, *Weak slice conditions, product domains, and quasiconformal mappings*, Rev. Mat. Iberoam., **17** (2001), 1–37.

58. with P. MacManus and B. Hanson, *Doubling for general sets*, Math. Scand. **88** (2001), 229–245.

59. *Mixed norms and analytic function spaces*, Proc. Royal Irish Acad. **100A** (2000), 1–9.

60. with P. MacManus, *Singular measures and the key of G*, Publ. Matemàtiques **44** (2000), 483–489.

61. *Inequalities of John-Nirenberg type in doubling spaces*, J. Anal. Math. **79** (1999), 215–240.

62. *Is the maximal function of a Lipschitz function continuous?*, Ann. Acad. Sci. Fenn. **24** (1999), 519–528.

63. with J. O'Shea, *Weighted Trudinger-type inequalities*, Indiana Univ. Math. J. **48** (1999), 85–114.

64. with P. Koskela, *On the fusion problem for degenerate elliptic equations II*, Comment. Math. Univ. Carolinae. **40** (1999), 1–6.

65. with M.S. Ramanujan and D. Vukotic, *Bounded and compact multipliers between Bergman and Hardy spaces*, Integr. Equ. Oper. Theory **35** (1999), 1–19.

66. with P. Koskela and D. Vukotić, *Fractional integration, differentiation, and weighted Bergman spaces*, Math. Proc. Cambridge Phil. Soc. **126** (1999), 369-385.

67. *Strong doubling conditions*, Math. Ineq. Appl. **1** (1998), 533–542.

68. with P. Koskela, *New Poincaré inequalities from old*, Ann. Acad. Sci. Fenn. **23** (1998), 251–260.

69. *Sequences of reverse Minkowski type*, Proc. Royal Irish Acad. **96A** (1996), 147–157.

70. with P. Koskela and G. Lu, *Boman equals John*, Proc. XVI Rolf Nevanlinna Colloq. (1996), 91–99.

71. with P. Koskela, *Criteria for Imbeddings of Sobolev-Poincaré type*, Internat. Math. Res. Not. **18** (1996), 881–901.

72. *Space-filling curves and related functions*, Bull. Irish Math. Soc. **36** (1996), 9–18.

73. *Pointwise multipliers for reverse Hölder spaces II*, Proc. Royal Irish Acad. **95A** (1995), 193–204.

74. with P. Koskela and G. Lu, *Subelliptic Poincaré inequalities: the case p < 1*, Publ. Matemàtiques **39** (1995), 313–334.

75. with P. Koskela, *Sobolev-Poincaré implies John*, Math. Res. Lett. **2** (1995), 577–594.

76. with P. Koskela, *Sobolev-Poincaré inequalities for p < 1*, Indiana Univ. Math. J. **43** (1994), 221-240.

77. *Pointwise multipliers for reverse Hölder spaces*, Studia Math. **109** (1994), 23–39.

78. *Summation conditions on weights*, Michigan Math. J. **40** (1993), 153–170.

79. *Estimates for operator norms on weighted spaces and reverse Jensen inequalities*, Trans. Amer. Math. Soc. **340** (1993), 253–272.

80. with D. MacHale, *Noncommutative anticommutative rings*, Bull. Irish Math. Soc. **18** (1987), 55–57.

81. with D. MacHale, *Dividing an angle into equal parts*, Math. Gaz. **69** (1985), 9–12.

82. *A note on the ring axioms*, Math. Gaz. **68** (1984), 215–216.

Research in preparation

83. *Rings with prescribed central factor and commutator subgroups.*

84. with D. MacHale, *Odd order rings with many idempotents II.*

85. with Yu. Zelenyuk, *Odd order rings with many idempotents III.*

86. with D. MacHale, *Rings with ideal centres.*

87. with D. MacHale, *Commuting probability for subrings and quotient rings.*

Other Publications

Problem Book Contributions

88. *Columbian Squares and 20+13 other maths problems from Ireland*, Problems 7, 23; Bernd Kreussler (ed.), 2013.

89. *2012: The apocalyptic years and 53 other maths problems from Ireland*, Problems 0, 6, 20, 25, 43; Bernd Kreussler (ed.), 2012.

90. *The Dutch Hillwalking Club and 20+11 other maths problems from Ireland*, Problems 6, 10, 31; Bernd Kreussler (ed.), 2011.

91. *The coins of Harpland and 20+10 other maths problems from Ireland*, Problem 26; Bernd Kreussler (ed.), 2010.

92. *The eccentric postman and 50 other maths problems from Ireland*, Problems 12, 14, 41, 42; Bernd Kreussler (ed.), 2009.

Typeset course notes

93. *MT550: Functional analysis*, NUI Maynooth Mathematics Department Lecture Notes, 2004.

94. *MT480: Partial differential equations*, NUI Maynooth Mathematics Department Lecture Notes, 2003.

95. *Sobolev spaces: a short course*, U. La Laguna short research course, 2000.

Opinion pieces

96. *Why do research in pure mathematics*, article, Irish Math. Soc. Bull. 72, 39–44.

97. with B.P. Mahon, *Bonus points for maths*, letter to the Editor, Irish Times, 12 October 2010.

98. with A. O'Shea, *Better maths adds up to a stronger economy*, 1000-word opinion piece, Sunday Business Post, 4 July 2010.

Reviews of papers and books

Except where stated, the following reviews are for *Mathematical Reviews*.

99. *(K, K′)-quasiconformal harmonic mappings of the upper half-plane onto itself*, by M. Chen and X. Chen; MR2920439.

100. *(K, K′)-quasiconformal harmonic mappings*, by D. Kalaj and M. Mateljević; MR2886455.

101. *The best writing on mathematics 2012*, M. Pitici (Ed.), Irish Math. Soc. Bull. **70** (2012), 60–63.

102. *Existence of extremal Beltrami coefficients with nonconstant modulus*, by G. Yao; MR2012a:30116.

103. *The best writing on mathematics 2010*, M. Pitici (Ed.), Irish Math. Soc. Bull. **67** (2011), 99–101.

104. *On quasiplanes in Euclidean spaces*, by O. Martio, V.M. Miklyukov, and M. Vuorinen; MR 2008e:30031.

105. *Mappings of finite distortion: formation of cusps*, by P. Koskela and J. Takkinen; MR 2008e:30026.

106. *The local homeomorphism property of spatial quasiregular mappings with distortion close to one*, by K. Rajala; MR 2007e:30022.

107. *Hyperbolic and uniform domains in Banach spaces*, by J. Väisälä; MR 2006k:30025.

108. *On Q-homeomorphisms*, by O. Martio, V. Ryazanov, U. Srebro, and E. Yabukov; MR 2006d:30027.

109. *The conformal module of quadrilaterals and of rings*, by R. Kühnau; MR 2006a:30019.

110. *Mappings with finite length distortion*, by O. Martio, V. Ryazanov, U. Srebro, and E. Yabukov; MR 2005i:30030.

111. *Mappings of finite distortion: removable singularities for locally homeomorphic mappings*, by K. Rajala; MR 2005f:30040.

112. *Limits of Teichmüller mappings on trajectories*, by P. Tukia; MR 2005e:30035.

113. *μ(z)-homeomorphisms in the plane*, by C. Zhiguo; MR 2005c:30016.

114. *Mappings of finite distortion: sharp Orlicz conditions*, by J. Kauhanen, P. Koskela, J. Maly, J. Onninen, and X. Zhong; MR 2005a:30038.

115. *Univalent σ-harmonic mappings: connections with quasiconformal mappings*, by G. Alessandrini and V. Nesi; MR 2004g:30032.

116. *Sobolev mappings with integrable dilatation and invariance of Green's functions*, by M. Mocanu; MR 2004d:30035.

117. *On conformal dilatation in space*, by C.J. Bishop, V.Y. Gutlyanskiĭ, O. Martio, and M. Vuorinen; MR 2004c:30038.

118. *On pseudospheres that are quasispheres*, by J.L. Lewis and Vogel A.; MR 2003b:30029.

119. *Invariance properties of $L^\phi(\mu)$-averaging domains under some mappings*, by G. Bao and S. Ding; MR 2002d:30026.

120. *Analytic properties of locally quasisymmetric mappings from Euclidean domains*, by J.T. Tyson; MR 2002b:30025.

121. *A counterexample theorem in quasiconformal mapping theory*, by Y. Shen; MR 2002a:30035.

122. *A sharp estimate on the norm of the martingale transform*, by J. Wittwer; MR 2001e:42022.

123. *Maximal averages over flat radial hypersurfaces*, by A. Iosevich; MR 2001b:42022.

124. *On the boundedness of multipliers, commutators and the second derivatives of Green's operators on H^1 and BMO*, by D.-C. Chang and S.-Y. Li; MR 2001b:42021.

125. *On X-ray transforms for rigid line complexes and integrals over curves in $\mathbf{R}^4$*, by A. Greenleaf, A. Seeger, and S. Wainger; MR 2001a:44002.

126. *Bounds on arithmetic projections and applications to the Kakeya conjecture*, by N.H. Katz and T. Tao; MR 2000m:28006.

127. *Maximal functions with mitigating factors in the plane*, by G. Marletta; MR 2000k:42-028.

128. *Convolution with affine arclength measures in the plane*, by D.M. Oberlin; MR 2000c:42016.

129. *Classes of singular integrals along curves and surfaces*, by A. Seeger, S. Wainger, J. Wright, and S. Ziesler; MR 1999m:42029.

130. *A geometric inequality with applications to the Kakeya problem in three dimensions*, by W. Schlag; MR 1999g:42025.

131. *Some estimates for radial Fourier multiplier operators with slowly decaying kernels*, by J. Epperson; MR 1999d:42020.

132. *Paraexponentials, Muckenhoupt weights, and resolvents of paraproducts*, by M.C. Pereyra and L.A. Ward; MR 1999c:42033.

133. *Maximal functions with respect to differential bases measuring mean oscillation*, by A.K. Lerner; MR 1999a:42011.

134. *Carleson conditions for asymptotic weights*, by M.B. Korey; MR 1998h:42019.

135. *Estimates on the operator norm of the fractional maximal function*, by G. Pradolini and O. Salinas; MR 1998f:42017.

136. *Multiparameter operators and sharp weighted inequalities*, by R. Fefferman and J. Pipher; MR 1998b:42027.

137. *Matrix A^p weights via S-functions*, by A. Volberg; MR 1998a:42013.

138. *Singular integral characterization of functions with conditions on the mean oscillation on spaces of homogeneous type*, by R. Crescimbeni; MR 1997c:42026.

139. *Weighted norm estimates for gradients of half-space extensions*, by R. Wheeden and J.M. Wilson; MR 1997c:31010.

140. *Norms of Fourier multipliers*, by M. Wong; MR 1996m:42023.

141. *Weak type inequality for certain maximal functions on spaces of homogeneous type*, by Y.-J. Yoo and E.-H. Choi; MR 1996i:42016.

142. *Fonction maximale forte et intégrale de Marcinkiewicz*, by L. Chevalier; MR 1996g:42009.

143. *Two-weight mixed Φ-inequalities for the one-sided maximal function*, by Q. Lai; 1996f:42014.

144. *Weighted norm inequalities for general maximal operators and approach regions*, by A. Sánchez-Colomer and J. Soria; 1996e:42023.

145. *Weighted Orlicz space integral inequalities for the Hardy-Littlewood maximal operator*, by S. Bloom and R. Kerman; MR 1996a:42019.

146. *Idempotents of Fourier multiplier algebra*, by V. Lebedev; MR 1995i:42010.

147. *A Fourier inequality with A_p and weak-L^1 weights*, by H. Heinig; MR 1995h:42013.

148. *Weighted maximal functions and derivatives of invariant Poisson integrals of potentials*, by P. Ahern and W. Cohn; MR 1995d:42025.

149. *A characterization of some weighted norm inequalities for the fractional maximal function*, by R. Wheeden; MR 1994m:42044.

150. *Estimates for the Kakeya maximal operator on radial functions in R^n*, by A. Carbery, E. Hernandez, and F. Soria; MR 1994m:42039.

151. *Extension theorems for real variable Hardy and Hardy-Sobolev spaces*, by A. Miyachi; MR 1994k:46047.

152. *L^2 estimates for some maximal functions*, by H. Gunawan; MR 1994h:42031.

153. *Properties of BMO functions whose reciprocals are also BMO*, by R. Johnson and C. Neugebauer; MR 1994g:42030.

154. *Weighted Lorentz spaces and the Hardy operator*, by M. Carro and J. Soria; MR 1994f:42025.

155. *Moments, masses de Dirac et decomposition de functions*, by J. Duoandikoetxea and E. Zuazua; MR 1994a:42046.

156. *Weak type estimates for the maximal operators associated to plane curves*, by Q.R. Qiu; MR 1994a:42017.

157. *Criterion of L^2-boundedness for a class of oscillatory integrals*, by Y. Zhang and H.P. Liu; MR 1993e:42030.

158. *Wavelets and singular integrals on curves and surfaces*, by G. David; MR 1992k:42021.

159. *Singular integrals and rectifiable sets in R^n: Beyond Lipschitz graphs*, by G. David and S. Semmes; MR 1992j:42016.