

Publications of R. C. Vaughan

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1. On the representation of numbers as sums of powers of natural numbers, Proc. London Math. Soc. (3), 21(1970),160-180.
2. On sums of mixed powers, J. London Math. Soc. (2), 3(1971), 677-688.
3. On a problem of Erdős, Straus and Schinzel, Mathematika, 17(1970), 193-198.
4. An application of the large sieve to a diophantine equation, Oberwolfach 5(1971), 203-207.
5. On the addition of sequences of integers, J. Number Theory 4(1972), 1-16.
6. Some applications of Montgomery's sieve, J. Number Theory 5(1973), 64-79.
7. On Goldbach's problem, Acta Arithmetica 22(1972), 21-48.
8. A remark on the divisor function, Glasgow Math. J. 14(1973),54-55.
9. On the number of solutions of the equation $p = a + n_1..n_k$ with $a < p < x$, J. London Math. Soc. (2), 6(1972), 43-55.
10. On the number of solutions of the equation $p + n_1..n_k = N$, J. London Math. Soc. (2), 6(1973), 326-328.
11. A new estimate for the exceptional set in Goldbach's problem, Proc. St. Louis symp. 1972, A. M. S., 1973.
12. with H. L. Montgomery, Error terms in additive prime number theory, Oxford Quart. J. 24(1973), 207-216.
13. with P. Erdős, Bounds for the r -th coefficients of cyclotomic polynomials, J. London Math. Soc. (2), 8(1974), 393-400.
14. with H. L. Montgomery, Hilbert's inequality, J. London Math. Soc. (2), 8(1974), 73-82.
15. Diophantine approximation by prime numbers, I, Proc. London Math. Soc. (3), 28(1974), 373-384.
16. Diophantine approximation by prime numbers, II, Proc. London Math. Soc. (3), 28(1974), 385-401.
17. with H. L. Montgomery, The large sieve, Mathematika 20(1973), 119-134.
18. with H. L. Montgomery, The exceptional set in Goldbach's problem, Acta Arithmetica 27(1975), 353-370.
19. The problime number theorem, Bull. London Math. Soc. 6(1974), 337-340.
20. Mean value theorems in prime number theory, J. London Math. Soc. (2), 10(1975), 153-162.

21. Bounds for the coefficients of cyclotomic polynomials, *Mich. Math. J.* 21(1974), 289-295.
22. Diophantine approximation by prime numbers, III, *Proc. London Math. Soc.* (3), 33(1976), 177-192.
23. A note on Šnirel'man's approach to Goldbach's problem, *Bull. London Math. Soc.* 8(1976), 245-250.
24. Homogeneous additive equations and Waring's problem, *Acta Arithmetica*, 33(1977), 231-253.
25. On pairs of additive cubic equations, *Proc. London Math. Soc.* (3), 31(1977), 354-364.
26. On the estimation of Schnirel'man's constant, *J. für die reine und angewandte Math.* 290(1977), 93-108.
27. On the order of magnitude of Jacobsthal's function, *Proc. Edinburgh Math. Soc.* 20(1976-7), 329-331.
28. with B. Saffari, On the fractional parts of x/n and related sequences, I, *Ann. Inst. Fourier, Grenoble* 26(1976), 115-131.
29. with B. Saffari, On the fractional parts of x/n and related sequences, II, *Ann. Inst. Fourier, Grenoble* 27(1977), 1-30.
30. with B. Saffari, On the fractional parts of x/n and related sequences, III, *Ann. Inst. Fourier, Grenoble* 27(1977), 31-36.
31. with K. F. Roth, Inefficiency in packing squares with unit squares, *J. Comb. Th.* (A) 24(1978), 170-186.
32. with H. L. Montgomery, Exponential sums with multiplicative coefficients, *Inventiones Math.* 43(1977), 69-82.
33. On the distribution of αp modulo 1, *Mathematika* 24(1977), 135-141.
34. An elementary method in prime number theory, *Acta Arithmetica* 37(1980), 111-115.
35. with H. L. Montgomery, Mean values of character sums, *Can. J. Math.* 31(1979), 476-487.
36. Sommes trigonométriques sur les nombres premiers, *C. R. Acad. Sci. Paris, Série A* 285(1977), 981-983.
37. with P. Erdős, B. Saffari, On the asymptotic density of sets of integers, II, *J. London Math. Soc.* (2), 19(1979), 17-20.
38. On the estimation of trigonometrical sums over primes, and related questions, *Institut Mittag-Leffler* 9(1977), 1-52.
39. A survey of some important problems in additive number theory, *Soc. Math. de France, Astérisque* 61(1979), 213-222.

40. A remark on Freud's tauberian theorem, *Acta Math. Acad. Sci. Hungar.* 35(1984), 737-742.
41. Recent work in additive prime number theory, *Proc. I.C.M., Helsinki, 1978*, *Academia Scientiarum Fennica* (1980), 389-394.
42. A ternary additive problem, *Proc. London Math. Soc.*(3), 41(1980), 516-532.
43. with H. L. Montgomery, The distribution of squarefree numbers, *Recent progress in Analytic Number Theory*, Academic Press, London, 1981, vol. 1, 247-256.
44. An elementary method in prime number theory, *ibidem*, 341-348.
45. *The Hardy-Littlewood Method*, Cambridge University Press, 1981.
46. Some remarks on Weyl sums, *Colloquia Math. Soc. János Bolyai*, 34 *Topics in classical number theory*, Budapest, 1981, North Holland (1984), 1585-1602.
47. with P. T. Bateman and C. B. Pomerance, On the size of the coefficients of the cyclotomic polynomials, *ibidem*, 171-202.
48. with H. Riesel, On sums of primes, *Arkiv för matematik* 21(1983), 45-74.
49. Identities in prime number theory, *Séminaire de Théorie des Nombres*, Talence, Année 1981-1982, exposé no. 21.
50. with A. Hinkkanen, An analytic inequality, *Mathematika* 30(1983), 142-152.
51. with H. L. Montgomery, The order of magnitude of the m -th coefficients of cyclotomic polynomials, *Glasgow Math. J.* 27(1985), 143-159.
52. with J. H. Loxton, The estimation of complete exponential sums, *Can. Math. Bull.* 28(4)(1985), 440-454.
53. with J. W. S. Cassels, Ivan Matveevich Vinogradov, *Biographical Memoirs of Fellows of the Royal Society* 31(1985), 613-631 & *Bull. London Math. Soc.* 17(1985), 584-600.
54. Sums of three cubes, *Bull. London Math. Soc.*, 17(1985), 17-20.
55. with H. L. Montgomery, On the distribution of reduced residues, *Annals of Mathematics* 123(1986), 311-333.
56. with H. L. Montgomery, A basic inequality, *Proceedings of the Congress on Number Theory*, Zarautz, 20-25 August 1984, *Servicio Editorial de la Universidad del País Vasco*, 1990, 163-175.
57. Coefficients of cyclotomic polynomials and related topics, *Proceedings of the Congress on Number Theory*, Zarautz, 20-25 August 1984, *Servicio Editorial de la Universidad del País Vasco*, 1990, 43-68.
58. On Waring's problem for smaller exponents, *Proc. London. Math. Soc.* (3), 52(1986), 445-463.
59. On Waring's problem for sixth powers, *J. London Math. Soc.*, (2), 33(1986), 227-236.

60. On Waring's problem for cubes, *J. für die reine und angewandte Math.* 365(1986), 122-170.
61. Sur le problème de Waring pour les cubes, *C. R. Acad. Sci. Paris, Série I* 301(1985), 253-255.
62. Adventures in Arithmetick, or: How to make good use of a Fourier transform, *Math. Int.* 9(1987), 53-60.
63. On Waring's problem for smaller exponents II, *Mathematika*, 33(1986), 6-22.
64. On Waring's problem: one square and five cubes, *Quart. J. Math. Oxford* (2), 37(1986), 117-127.
65. The L^1 mean of exponential sums over primes, *Bull. London Math. Soc.* 20(1988), 121-123.
66. A new iterative method in Waring's problem, *Acta Mathematica*, 162(1989), 1-71.
67. On Waring's problem for cubes II, *J. London Math. Soc.* (2), 39(1989), 205-218.
68. A new iterative method in Waring's problem II, *J. London Math. Soc.* (2), 39(1989), 219-230.
69. Recent work on Waring's problem, in "Number Theory, Trace Formulas and Discontinuous Groups, Academic Press, 1989, pp. 503-509.
70. with H. L. Montgomery, On the Erdős-Fuchs theorem, in "A tribute to Paul Erdős", edited by A. Baker, B. Bollobás & A. Hajnal, C.U.P., Cambridge, 1990.
71. with A. K. Nandi, Theorem with applications in coding and matching problems, *Electronics Letters*, vol. 26, no. 23, 8th November 1990.
72. with A. D. Pollington, The k -dimensional Duffin and Schaeffer conjecture, *Mathematika*, 37(1990), 190-200 & *Séminaire de Théorie des Nombres, Bordeaux*, 1(1989), 81-87.
73. with T. D. Wooley, On Waring's problem: Some refinements, *Proc. London Math. Soc.*(3), 63(1991), 35-68.
74. with T. D. Wooley, On a problem related to one of Littlewood and Offord, *Oxford Q. Journal* (2), 42(1991), 379-386.
75. On the eigenvalues of Redheffer's matrix, I, *Proc. Conf. BYU May 1991*, Marcel Dekker, 1993, 283-296.
76. with T. D. Wooley, Further improvements in Waring's problem, I, *Acta Mathematica*, 174(1995), 147-240.
77. with T. D. Wooley, Further improvements in Waring's problem, II, Sixth powers, *Duke Math. J.*(76)1994, 683-710.
78. with T. D. Wooley, Further improvements in Waring's problem, III, Eighth powers, *Phil. Trans. Royal Soc. London A* (1993) 345, 385-396.

79. The use in additive number theory of numbers without large prime factors, *Phil. Trans. Royal Soc. London A* (1993), 363-376.
80. with K. F. Roth, Obituary Theodor Estermann, *Bull. London Math. Soc.* 26(1994) 593-606.
81. with T. D. Wooley, On a certain nonary cubic form and related equations, *Duke Math. J.* (80)1995, 669-735.
82. with H. L. Montgomery and T. D. Wooley, Some remarks on Gauss sums associated with k -th powers, *Math. Proc. Camb. Phil. Soc.* 118(1995), 21-33.
83. On the eigenvalues of Redheffer's matrix, II, *J. Austral. Math. Soc. (Series A)* 60(1996), 260-273.
84. Small values of Dirichlet L -functions at 1, *Analytic Number Theory: Proceedings of a Conference in Honor of Heini Halberstam, Volume 2*, 1996, pp. 755-766.
85. with D. A. Goldston, On the Montgomery-Hooley asymptotic formula, *Proceedings of the Symposium on Sieve methods, Exponential Sums, and their Applications in Number Theory, Cardiff 1995*, Cambridge University Press, 1996, pp. 117-142.
86. *The Hardy-Littlewood Method*, second edition, Cambridge University Press, 1997.
87. with T. D. Wooley, A special case of Vinogradov's mean value theorem, *Acta Arithmetica*, 74(1997), 193-204.
88. with J. Brüdern, A. Granville, A. Perelli, T. D. Wooley, On the exponential sum over k -free numbers, *Phil. Trans. Royal Soc. Lond. A* 356(1998), 739-761.
89. with T. D. Wooley, On the distribution of generating functions, *Bull. London Math. Soc.* 30(1998), 113-122.
90. On a variance associated with the distribution of general sequences in arithmetic progressions I, *Phil. Trans. Royal Soc. Lond. A* 356(1998), 781-791.
91. On a variance associated with the distribution of general sequences in arithmetic progressions II, *Phil. Trans. Royal Soc. Lond. A* 356(1998), 793-809.
92. with H. L. Montgomery, Extreme values of Dirichlet L -functions at 1, *Number Theory in Progress, vol II, Proc. Int. Conf. Number Theory, Stefan Banach Centre, 60th Birthday Andrzej Schinzel, Zakopane, 1997*, pp.1039-1052, Walter de Gruyter, 1999.
93. Hardy's legacy to number theory, *J. Austral. Math. Soc. (Series A)* 65(1998), 238-266.
94. with T. D. Wooley, Further improvements in Waring's problem, IV, *Acta Arithmetica* 94(2000), 203-285.
95. On a variance associated with the distribution of primes in arithmetic progressions, *Proc. London Math. Soc.* 82(2001), 533-553.
96. A generalised divisor problem, *J. für die reine und angewandte Mathematik*, 537(2001), 151-163.

97. with K. D. Weis, On sigma-phi numbers, *Mathematika* 48(2001), 169-189.
98. with H. L. Montgomery, Mean values of multiplicative functions, *Periodica Math. Hungarica*, 43(2001), 199-214.
99. with T. D. Wooley, Waring's Problem: A Survey, *Number Theory for the Millennium III*, A. K. Peters, 2002, pp. 301-340.
100. with T. D. Wooley, Waring's Problem: A Survey, *Surveys in Number Theory*, A. K. Peters, 2003, pp. 285-324, edited by M. A. Bennett, B. C. Berndt, N. Boston, H. G. Diamond, A. J. Hildebrand, W. Philipp
101. Moments for primes in arithmetic progressions, I, *Duke Math. J.*, 120(2003), 371-383.
102. Moments for primes in arithmetic progressions, II, *Duke Math. J.*, 120(2003), 385-403.
103. A mean value theorem for cubic fields, *J. Number Th.*, 100(2003), 169-183.
104. with H. L. Montgomery, *Multiplicative Number Theory I. Classical Theory*, Cambridge University Press, xii + 516pp, 2006.
105. A variance for k -free numbers in arithmetic progressions, *Proc. London Math. Soc.* (3), 91(2005), 573-597 .
106. Sums of two squares near perfect squares, An Appendix to the paper "Diophantine approximation on planar curves and the distribution of rational points" by V. Beresnevich, D. Dickinson, S. Velani, *Annals of Mathematics*, 166(2007), 367-426.
107. On the number of partitions into primes, *The Ramanujan Journal*, 15(2008), 109-121.
108. The Bombieri-Vinogradov Theorem, AIM discussion paper, November 2005.
109. with S. Velani, Diophantine approximation on planar curves: the convergence theory, *Inventiones*, 166(2006), 103-124.
110. with Tsz Ho Chan, An average Bombieri-Vinogradov theorem, AIM preprint, January 2006.
111. On generating functions in additive number theory, I, in *Analytic Number Theory, Essays in Honour of Klaus Roth*, edited by W. W. L. Chen, W. T. Gowers, H. Halberstam, W. M. Schmidt, R. C. Vaughan, CUP, 2009.
112. with H. L. Montgomery, Local Variation of Euler Products, *Funct. Approx. Comment. Math.* 39 (2008), 273-288.
113. with V. Beresnevich and S. Velani, Inhomogeneous diophantine approximation on planar curves, *Mathematische Annalen*, 349(2011), 929-942.
114. with Jing-Jing Huang, Mean value theorems for binary Egyptian fractions, *Journal of Number Theory*, *J. Number Theory* 131(2011), 1641-1656.
115. with William D. Banks and Ahmet M. Guloglu, On Waring's problem for dense sequences, *Journal de Théorie des Nombres de Bordeaux* 26(2014), 1-16.

116. with Jing–Jing Huang, Mean value theorems for binary Egyptian fractions II, *Acta Arithmetica* 155(2012), 287–296.
117. Integer points on elliptic curves, *Rocky Mountain Journal of Mathematics* 44(2014), 1–6.
118. with Jing–Jing Huang, On the Exceptional Set for binary Egyptian fractions, *Bull. London Math. Soc.* (2013)45, 861–874.
119. Srinivasa Ramanujan - going strong at 125: The Hardy–Littlewood–Ramanujan method, *Notices of the AMS*, January 2013.
120. The general Goldbach problem with Beatty primes, *The Ramanujan Journal*, 34 (2014), 347–359.
121. Some problems of 'Partitio Numerorum': Hybrid expressions, *The Legacy of Srinivasa Ramanujan, RMS-Lecture Notes Series No. 20*, 2013, pp. 363–385.
122. with T. D. Wooley, The asymptotic formula in Waring's problem: higher order expansions, *J. für reine und angewandt Math.* 742(2018), 17–46.
123. with P. Pongsriiam, The divisor function on residue classes I, *Acta. Arith.* 168 (2015), 369–381.
124. Squares: Additive Questions and Partitions, *Int. J. Number Theory*, Special Issue in Memory of Paul T. Bateman and Heini Halberstam, 11 (2015), 1367–1409.
125. Zeros of Dirichlet series, *Indag. Math.*, In Memoriam J. G. Van der Corput, 26(2015), 897–909.
126. with V. Beresnevich, S. Velani and E. Zorin, Diophantine approximation on manifolds and the distribution of rational points: Contributions to the convergence theory, *Int. Math. Res. Notices*, (2016), 1–24.
127. Goldbach's Conjectures: A historical perspective, in *Open Problems in Mathematics* edited by John Forbes Nash, Jr., Michael Th. Rassias, Springer Verlag, 2016, 479–520.
128. with P. Pongsriiam, The divisor function on residue classes II, *Acta Arithmetica*, 182 (2018), 133–181.
129. with B. Hanson, Ruixiang Zhang, The least number with prescribed Legendre symbols, *J. Number Theory*, 179(2017), 3–16.
130. with W. W. L. Chen, Klaus Roth Obituary, *Daily Telegraph*, 24th February 2016, <http://www.telegraph.co.uk/news/obituaries/12172026/Klaus-Roth-mathematician-obituary.html>
131. with W. W. L. Chen, Klaus Friedrich Roth, *Bibliographical Memoirs of Fellows of the Royal Society*, 2017.
132. with W. W. L. Chen, In Memoriam Klaus Friedrich Roth, *Mathematika* 63(2017), 711–712.

133. with V. Beresnevich, L. Lee, S. Velani, Diophantine approximation on manifolds and lower bounds for Hausdorff dimension, *Mathematika* 63(2017), 1136–1151.
134. with W. W. L. Chen, Klaus Friedrich Roth, *Bulletin London Math. Soc.* 50(2018), 529–560.
135. with B. Hanson, Density of positive diagonal binary quadratic forms, *Acta Arithmetica*, to appear.
136. with V. Beresnevich, S. Velani, E. Zorin, Diophantine approximation on curves and the distribution of rational points: Divergence theory, submitted.
137. with V. Beresnevich, S. Velani, E. Zorin, Diophantine approximation on manifolds and the distribution of rational points: contributions to the divergence theory. In preparation.