

List of publications of Martin Muldoon

1. M. E. Muldoon, Singular integrals whose kernels involve certain Sturm-Liouville Functions, Thesis (Ph.D.), University of Alberta (Canada). 1967.
2. M. E. Muldoon, Extension of a result of L. Lorch and P. Szego on higher monotonicity, *Canad. Math. Bull.* 11 (1968), 447–451.
3. M. E. Muldoon, Singular integrals whose kernels involve certain Sturm-Liouville functions, *I. J. Math. Mech.* 19 1969/1970 855–873.
4. L. Lorch, M. E. Muldoon, and P. Szego, Higher monotonicity properties of certain Sturm-Liouville functions, III, *Canadian J. Math.* 22 (1970), 1238–1265.
5. M. E. Muldoon, Elementary remarks on multiply monotonic functions and sequences, *Canad. Math. Bull.* 14 (1971), 69–72.
6. L. Lorch, M. E. Muldoon, and P. Szego, Higher monotonicity properties of certain Sturm-Liouville functions, IV, *Canadian J. Math.* 24 (1972), 349–368.
7. M. E. Muldoon, Singular integrals whose kernels involve certain Sturm-Liouville functions, II. *Indiana Univ. Math. J.* 22 (1972/73), 51–63.
8. M. E. Muldoon, Some characterizations of the gamma function involving the notion of complete monotonicity, *Aequationes Math.* 8 (1972), 212–215.
9. L. Lorch, M. E. Muldoon, and P. Szego, Some monotonicity properties of Bessel functions, *SIAM J. Math. Anal.* 4 (1973), 385–392.
10. J. T. Lewis, and M. E. Muldoon, Monotonicity and convexity properties of zeros of Bessel functions, *SIAM J. Math. Anal.* 8 (1977), no. 1, 171–178.
11. M. E. Muldoon, Higher monotonicity properties of certain Sturm-Liouville functions, V. *Proc. Roy. Soc. Edinburgh Sect. A* 77 (1977/78), no. 1–2, 23–37.
12. M. E. Muldoon, An infinite system of equations characterizing the zero of Bessel functions, *Lett. Nuovo Cimento (2)* 23 (1978), no. 12, 447–448.
13. M. E. Muldoon, Some monotonicity properties and characterizations of the gamma function, *Aequationes Math.* 18 (1978), no. 1–2, 54–63.
14. M. E. H. Ismail, and M. E. Muldoon, Monotonicity of the zeros of a cross-product of Bessel functions, *SIAM J. Math. Anal.* 9 (1978), no. 4, 759–767.

15. M. E. Muldoon, On the zeros of a cross-product of Bessel functions of different orders, *Z. Angew. Math. Mech.* 59 (1979), no. 6, 272–273.
16. S. Ahmed, and M. E. Muldoon, On the zeros of confluent hypergeometric functions. III. Characterization by means of nonlinear equations, *Lett. Nuovo Cimento* (2) 29 (1980), no. 11, 353–358.
17. M. E. Muldoon, A differential equations proof of a Nicholson-type formula. *Z. Angew. Math. Mech.* 61 (1981), no. 11, 598–599.
18. M. E. Muldoon, The variation with respect to order of zeros of Bessel functions, *Rend. Sem. Mat. Univ. Politec. Torino* 39 (1981), no. 2, 15–25 (1982).
19. H. H. Kairies, and M. E. Muldoon, Some characterizations of q -factorial functions, *Aequationes Math.* 25 (1982), no. 1, 67–76.
20. M. E. Muldoon, On the zeros of a function related to Bessel functions. *Arch. Math. (Brno)* 18 (1982), no. 1, 23–34.
21. S. Ahmed, A. Laforgia, and M. E. Muldoon, On the spacing of the zeros of some classical orthogonal polynomials, *J. London Math. Soc.* (2) 25 (1982), no. 2, 246–252.
22. A. Laforgia, and M. E. Muldoon, Inequalities and approximations for zeros of Bessel functions of small order, *SIAM J. Math. Anal.* 14 (1983), no. 2, 383–388.
23. S. Ahmed, and M. E. Muldoon, Reciprocal power sums of differences of zeros of special functions, *SIAM J. Math. Anal.* 14 (1983), no. 2, 372–382.
24. M. E. Muldoon and R. Spigler, Some remarks on zeros of cylinder functions, *SIAM J. Math. Anal.* 15 (1984), no. 6, 1231–1233.
25. A. Laforgia, and M. E. Muldoon, Monotonicity and concavity properties of zeros of Bessel functions, *J. Math. Anal. Appl.* 98 (1984), no. 2, 470–477.
26. M. E. H. Ismail and M. E. Muldoon, Certain monotonicity properties of Bessel functions, *J. Math. Anal. Appl.* 118 (1986), no. 1, 145–150.
27. S. Ahmed, M. E. Muldoon, and R. Spigler, Inequalities and numerical bounds for zeros of ultraspherical polynomials, *SIAM J. Math. Anal.* 17 (1986), no. 4, 1000–1007.
28. M. E. H. Ismail, L. Lorch, and M. E. Muldoon, Completely monotonic functions associated with the gamma function and its q -analogues, *J. Math. Anal. Appl.* 116 (1986), no. 1, 1–9.
29. A. Laforgia, and M. E. Muldoon, Some consequences of the Sturm comparison theorem, *Amer. Math. Monthly* 93 (1986), no. 2, 89–94.

30. M. E. Muldoon, On the zeros of some special functions: differential equations and Nicholson-type formulas, Equadiff 6 (Brno, 1985), pp.155–160, Lecture Notes in Math., 1192, Springer, Berlin, 1986.
31. L. Lorch, and M. E. Muldoon, An inequality for concave functions with applications to Bessel and trigonometric functions, Facta Univ. Ser. Math. Inform. No. 2 (1987), 29–34.
32. M. E. H. Ismail, and M. E. Muldoon, Zeros of combinations of Bessel functions and their derivatives, Appl. Anal. 31 (1988), no. 1–2, 73–90.
33. IM. E. H. Ismail, and M. E. Muldoon, On the variation with respect to a parameter of zeros of Bessel and q -Bessel functions, J. Math. Anal. Appl. 135 (1988), no. 1, 187–207.
34. A. Laforgia, and M. E. Muldoon, Monotonicity properties of zeros of generalized Airy functions, Z. Angew. Math. Phys. 39 (1988), no. 2, 267–271.
35. M. E. Muldoon, On the positive roots of an equation involving modified Bessel functions, Proc. Edinburgh Math. Soc. (2) 33 (1990), no. 3, 491–493.
36. L. Lorch, M. E. Muldoon, and P. Szego, Inflection points of Bessel functions of negative order, Canad. J. Math. 43 (1991), no. 6, 1309–1322.
37. L. Nicol-Amati Gori, A. Laforgia, and M. E. Muldoon, Higher monotonicity properties and inequalities for zeros of Bessel functions, Proc. Amer. Math. Soc. 112 (1991), no. 2, 513–520.
38. M. E. H. Ismail, and M. E. Muldoon, A discrete approach to monotonicity of zeros of orthogonal polynomials, Trans. Amer. Math. Soc. 323 (1991), no. 1, 65–78.
39. M. E. Muldoon, Approximate distribution density of zeros of Bessel functions, Europhys. Lett. 20 (1992), no. 1, 1–5.
40. M. E. Muldoon, Properties of zeros of orthogonal polynomials and related functions, Proceedings of the Seventh Spanish Symposium on Orthogonal Polynomials and Applications (VII SPOA) (Granada, 1991). J. Comput. Appl. Math. 48 (1993), no. 1-2, 167–186.
41. Z. Doslá, M. Háčik, and M. E. Muldoon, Further higher monotonicity properties of Sturm-Liouville functions, Arch. Math. (Brno) 29 (1993), no. 1-2, 83–96.
42. M. E. H. Ismail, and M. E. Muldoon, Inequalities and monotonicity properties for gamma and q -gamma functions, Approximation and computation (West Lafayette, IN, 1993), 309–323, Internat. Ser. Numer. Math., 119, Birkhäuser Boston, Boston, MA, 1994.
43. C. G. Kokologiannaki, M. E. Muldoon, and P. D. A. Siafarikas, A unimodal property of purely imaginary zeros of Bessel and related functions, Canad. Math. Bull. 37 (1994), no. 3, 365–373.

44. A. Elbert, Muldoon, Martin E. On the derivative with respect to a parameter of a zero of a Sturm-Liouville function, *SIAM J. Math. Anal.* 25 (1994), no. 2, 354–364.
45. M. E. Muldoon, Electrostatics and zeros of Bessel functions, Proceedings of the International Conference on Orthogonality, Moment Problems and Continued Fractions (Delft, 1994). *J. Comput. Appl. Math.* 65 (1995), no. 1-3, 299–308.
46. M. E. Muldoon, and F. Neuman, Principal pairs for oscillatory second order linear differential equations, *Dynamical systems and applications*, 517–526, World Sci. Ser. Appl. Anal., 4, World Sci. Publ., River Edge, NJ, 1995.
47. M. E. Muldoon, A monotonicity property of Bessel functions, *Special functions (Torino, 1993)*. *Ann. Numer. Math.* 2 (1995), no. 1-4, 345–351.
48. A. Ronveaux, and M. E. Muldoon, Stieltjes sums for zeros of orthogonal polynomials, Proceedings of the Fourth International Symposium on Orthogonal Polynomials and their Applications (Evian-Les-Bains, 1992). *J. Comput. Appl. Math.* 57 (1995), no. 1-2, 261–269.
49. M. E. H. Ismail, and M. E. Muldoon, Bounds for the small real and purely imaginary zeros of Bessel and related functions, *Methods Appl. Anal.* 2 (1995), no. 1, 1–21.
50. L. Lorch, and M. E. Muldoon, Transcendentality of zeros of higher derivatives of functions involving Bessel functions. *Internat. J. Math. Math. Sci.* 18 (1995), no. 3, 551–560.
51. M. E. Muldoon, Convexity properties of special functions and their zeros, Recent progress in inequalities (Niš, 1996), 309?323, Math. Appl., 430, Kluwer Acad. Publ., Dordrecht, 1998. 33-02
52. M. E. Muldoon, and A. A. Ungar, Beyond sin and cos. *Math. Mag.* 69 (1996), no. 1, 3–14.
53. M. E. Muldoon, and A. Raza, Convolution formulae for functions of Rayleigh type, *J. Phys. A* 31 (1998), no. 46, 9327–9330.
54. L. Lorch, and M. E. Muldoon, The real zeros of the derivatives of cylinder functions of negative order, Dedicated to Richard A. Askey on the occasion of his 65th birthday, Part III. *Methods Appl. Anal.* 6 (1999), no. 3, 317–326.
55. A. Elbert, and M. E. Muldoon, Inequalities and monotonicity properties for zeros of Hermite functions, *Proc. Roy. Soc. Edinburgh Sect. A* 129 (1999), no. 1, 57–75.
56. D. P. Gupta, and M. E. Muldoon, Riccati equations and convolution formulae for functions of Rayleigh type. *J. Phys. A* 33 (2000), no. 7, 1363–1368.

57. A. Laforgia, Andrea, M. E. Muldoon, and P. D. Siafarikas, Árpád Elbert, 1939?2001: a memorial tribute. Proceedings of the Sixth International Symposium on Orthogonal Polynomials, Special Functions and their Applications (Rome, 2001). *J. Comput. Appl. Math.* 153 (2003), no. 1-2, 1–8.
58. M. V. DeFazio and M. E. Martin, On the zeros of a transcendental function. *Advances in analysis*, pp. 385–394, World Sci. Publ., Hackensack, NJ, 2005.
59. M. E. Muldoon, Generalized hyperbolic functions, circulant matrices and functional equations. *Linear Algebra Appl.* 406 (2005), 272–284.
60. D. P. Gupta, and M. E. Muldoon,. Inequalities for the smallest zeros of Laguerre polynomials and their q -analogues. *JIPAM. J. Inequal. Pure Appl. Math.* 8 (2007), no. 1, Article 24, 7 pp.
61. M. V. DeFazio, D. P. Gupta, and M. E. Muldoon, Limit relations for the complex zeros of Laguerre and q -Laguerre polynomials. *J. Math. Anal. Appl.* 334 (2007), no. 2, 977–982.
62. A. Elbert and M. E. Muldoon, Approximations for zeros of Hermite functions. *Special functions and orthogonal polynomials*, pp. 117–126, Contemp. Math., 471, Amer. Math. Soc., Providence, RI, 2008
63. M. E. Muldoon, Continuous ranking of zeros of special functions. *J. Math. Anal. Appl.* 343 (2008), no. 1, 436–445.
64. L. Lorch and M. E. Muldoon, Monotonic sequences related to zeros of Bessel functions. *Numer. Algorithms* 49 (2008), no. 1–4, 221–233.
65. M. E. H. Ismail, and M. E. Muldoon, A tribute to David Masson. *J. Approx. Theory* 164 (2012), no. 2, 211–217.
66. M. E. H. Ismail and M. E. Muldoon, Higher monotonicity properties of q -gamma and q - ψ functions. *Adv. Dyn. Syst. Appl.* 8 (2013), no. 2, 247–259.
67. K. Driver and M. E. Muldoon, Zeros of pseudo-ultraspherical polynomials. *Anal. Appl. (Singap.)* 12 (2014), no. 5, 563–581.
68. K. Driver and M. E. Muldoon, Common and interlacing zeros of families of Laguerre polynomials. *J. Approx. Theory* 193 (2015), 89–98.
69. K. Driver and M. E. Muldoon, Interlacing properties and bounds for zeros of some quasi-orthogonal Laguerre polynomials. *Comput. Methods Funct. Theory* 15 (2015), no. 4, 645–654.
70. K. Driver and M. E. Muldoon, Bounds for extreme zeros of quasi-orthogonal ultraspherical polynomials, *J. Class. Anal.* 9 (2016), no. 1, 69–78.

71. K. Driver and M. E. Muldoon, Zeros of quasi-orthogonal ultraspherical polynomials, *Indag. Math. (N.S.)* 27 (2016), no. 4, 930–944. .
72. K. Driver and M. E. Muldoon, Interlacing properties of real zeros of general Laguerre polynomials, *J. Inequal. Spec. Funct.* 7 (2016), no. 1, 1–17.
73. K. Driver and M. E. Muldoon, A connection between ultraspherical and pseudo-ultraspherical polynomials, *J. Math. Anal. Appl.* 439 (2016), no. 1, 323–329.