P. Kynn

Born: September 1, 1931; Hoddesdon, Herts (U.K.)

Education:

B.Sc. London, 1953
M.Sc. London, 1954
Dr. rer. nat., Mainz, 1959
Ph.D. London, 1960
D.Sc. London, 1965

Professional Experience:

1952-53 Admiralty Research Laboratory, Teddington, U.K. (Mathematician)

1953-55 National Physical Laboratory, Teddington, U.K. (Mathematician)

1955-56 Scientific Computing Service Ltd., London, U.K. (Mathematician)

1956-57 Computer Programming Service Ltd., London, U.K. (Technical Director)

1958-59 Technische Hochschule, München, W. Germany (Research Appointment)

1959-60 Universität, Mainz, W. Germany (Research Appointment)

1960-64 Mathematisch Centrum, Amsterdam, Netherlands (Research Appointment)

1964-67 Mathematics Research Center, University of Wisconsin, Madison, U.S.A. (Research Appointment)

Summer 1967 Eidgenössische Technische Hochschule, Zürich, Switzerland (Academic Guest)

1968-69 Mathematisch Centrum, Amsterdam, Netherlands (Research Appointment)

1969-71 Louisiana State University in New Orleans, U.S.A. (Associate Professor)

Summer 1971 Mathematics Research Center, University of Wisconsin, Madison, U.S.A. (Visiting Professor)

1971-75 Centre de recherches mathématiques, Université de Montréal, Canada (Research Appointment)

1975-1980 McGill University, Montreal, Canada (Visiting Professor).

Publications

-1956-

1. On a device for computing the $e_m(S_n)$ transformation, Math. Comp., 10 (1956) 91-96.
2. On a Procrustean technique for the numerical transformation of slowly convergent sequences and series, Proc. Camb. Phil. Soc., 52 (1956) 663-671.
3. Central difference and other forms of the Euler transformation, Quart. Jour. Mech. App. Math., 9 (1956) 249-256.
4. A note on Salzer's method for summing certain slowly convergent series, Jour. Math. Phys., 35 (1956) 318-320.
5. On a cubically convergent process for determining the zeros of certain functions, Math. Comp., 10 (1956) 98-100.

-1959-

6. Converging factors for continued fractions, Num. Math., 1 (1959) 272-320 (London dissertation).
7. On the propagation of error in certain nonlinear algorithms, Num. Math., 1 (1959) 142-149.
8. A sufficient condition for the instability of the q-d algorithm, Num. Math., 1 (1959) 203-207.

-1960-

9. Über einer Interpolations - Algorithms und gewisse andere Formeln, die in der Theorie der Interpolation durch rationale Funktionen bestehen, Num. Math., 2 (1960) 151-182 (Mainz dissertation).
10. The rational approximation of functions which are formally defined by a power series expansion, Math. Comp., 44 (1960) 147-186.

11. Confluent forms of certain nonlinear algorithms, Arch. Math., 11 (1960) 223-236.

12. A note on a confluent form of the ε-algorithm, Arch. Math., 11 (1960) 237-240.

-1961-

13. L'ε-algorithmo e la tavola di Padé, Rend. Mat. (Roma), 20 (1961) 403-408.

14. The numerical transformation of slowly convergent series by methods of comparison, Rev. Franç. Trait. Inf. (Chiffres): Part I, 4 (1961) 177-210; Part II, 5 (1962) 65-88.

15. The epsilon algorithm and operational formulas of numerical analysis, Math. Comp., 15 (1961) 151-158.

16. On repeated application of the ε-algorithm, Rev. Franç. Trait. Inf. (Chiffres), 4 (1961) 19-22.

17. A comparison between the numerical performances of the Euler transformation and the epsilon algorithm, Rev. Franç. Trait. Inf. (Chiffres), 4 (1961) 23-29.

18. A sufficient condition for the instability of the ε-algorithm, Nieuwe Arch. Wisk., 9 (1961) 117-119.

19. On the tabulation of indefinite integrals, Nord. Tid. Inf. Beh. (BIT), 1 (1961) 286-289.

-1962-

20. Acceleration techniques in numerical analysis with particular reference to problems in one independent variable, Proc. IFIP Congress 1962, North Holland Pub. Co., Amsterdam (1963) 149-156.

21. Acceleration techniques for iterated vector and matrix problems, Math. Comp., 16 (1962) 301-322.

22. Una nota su un anologo infinitesimale del q-d algorithmo, Rend. Mat. (Roma), 21 (1962) 77-85.

23. On a connection between two techniques for the numerical transformation of slowly convergent series, Proc. Roy. Neth. Acad. Sci., 65 (1962) 149-154.

24. The numerical efficiency of certain continued fraction expansions, Proc. Roy. Neth. Acad. Sci., 65 (1962) 127-148.

25. Numerical efficiency profile functions, Proc. Roy. Neth. Acad. Sci., 65 (1962) 118-126.

26. A comparison technique for the numerical transformation of slowly convergent series based on the use of rational functions, Num. Math., 4 (1962) 8-44.

27. Note on the solution of a certain boundary value problem, Nord. Tid. Inf. Beh. (BIT), 2 (1962) 61-64.

28. A note on a method of Bradshaw for transforming slowly convergent series and continued fractions, Amer. Math. Month., 69 (1962) 883-889.

29. An arsenal of Algol procedures for complex arithmetic, Nord. Tid. Inf. Beh. (BIT), 4 (1962) 231-255.

30. A note on fitting certain types of experimental data, Statistica Neerlandica, 16 (1962) 143-150.

31. Upon a second confluent form of the ε-algorithm, Proc. Glas. Math. Assoc., 5 (1962) 160-165.

-1963-

32. Continued fractions whose coefficients obey a noncommutative law of multiplication, Arch. Rat. Mech. Anal., 12 (1963) 273-312.

33. Converging factors for the Weber parabolic cylinder function of complex argument, Proc. Roy. Neth. Acad. Sci., 66 (1963) 721-754.

34. A numerical study of a result of Stieltjes, Rev. Franç. Trait. Inf. (Chiffres) 3 (1963) 175-196.

35. Note on a converging factor for a certain continued fraction, Num. Math., 5 (1963) 332-352.

36. Singular rules for certain nonlinear algorithms, Nord. Tid. Inf. Beh. (BIT), 3 (1963) 175-195.

37. On a connection between the first and second confluent forms of the ε-algorithm, Nieuwe Arch. Wisk., 11 (1963) 19-21.

38. Translation from the Russian: Khovanskii A.N., The application of continued fractions and their generalizations to problems in approximation theory, Noordhoff, Groningen (1963).

39. Partial differential equations associated with certain nonlinear algorithms, Zeit. ang. Math. Phys., 15 (1964) 273-289.

40. General purpose vector epsilon algorithm procedures, Num. Math., 6 (1964) 22-36.

41. On some recent developments in the theory and application of continued fractions, Jour. SIAM Numer. Anal., 1 (1964) 177-197.

42. Four lectures on the numerical application of continued fractions, CIME Summer School Lectures, Perugia (1964), Cremona, Rome (1965); see also: Five lectures..., Math. Res. Center (Univ. of Wisconsin) Orientation Lecture Series 5 (1966).

43. Translation from the Russian: Khintchine A. Ya., Continued fractions, Noordhoff, Groningen (1964).

-1965-

44. A note on programming repeated application of the epsilon algorithm, Rev. Franç. Trait. Inf. (Chiffres), 8 (1965) 23-62.

-1966-

45. Upon systems of recursions which obtain among the quotients of the Padé table, Num. Math., 8 (1966) 264-269.

46. On the computation of certain functions of large argument and parameter, Nord. Tids. Inf. Beh. (BIT), 6 (1966) 227-259.

47. On the convergence and stability of the epsilon algorithm, Jour. SIAM Numer. Anal., 3 (1966) 91-122.

48. An arsenal of Algol procedures for the evaluation of continued fractions and for effecting the epsilon algorithm, Rev. Franç. Trait. Inf. (Chiffres), 9 (1966) 327-362.

49. Transformations to accelerate the convergence of Fourier series, Gertrude Blanch Anniversary Volume, Wright Patterson Air Force Base (U.S.) Pubn. (1966).

50. Upon a conjecture concerning a method for solving linear equations, and certain other matters, Trans. of the Twelfth Conference of Army Mathematicians, USA War Office (1966) (More complete version: Math. Res. Center (Univ. of Wisconsin) Report 626 (1966)).

51. Upon the diagonal sequences of the Padé table, Math. Res. Center (Univ. of Wisconsin) Report 660 (1966).

-1967-

52. A general system of orthogonal polynomials, Quart. Jour. Math. (Oxford), 18 (1967) 81-96.

53. A note on the convergence of certain noncommutative continued fractions, Math. Res. Center (Univ. of Wisconsin) Report 750 (1967).

-1968-

54. Upon the definition of an integral as the limit of a continued fraction, Arch. Rat. Mech. Anal., 28 (1968) 83-148.

55. Vector continued fractions, Lin. Alg. Appl., 1 (1968) 357-395.

56. Upon the Padé table derived from a Stieltjes series, Jour. SIAM Numer. Anal., 5 (1968) 805-834.

-1969-

57. Zur Theorie der mit gewissen speziellen Funktionen verknüpften Padéschen Tafeln, Math. Zeit., 109 (1969) 66-70.

-1971-

58. On an extension of a result due to Pólya, Jour. reine ang. Math. (Crelle's Journal), 248 (1971) 127-132.

59. Difference-differential recursions for Padé quotients, Proc. Lond. Math. Soc., 23 (1971) 283-300.

60. Upon the generalized inverse of a formal power series with vector valued coefficients, Compositio Math., 23 (1971) 453-460.

61. Über orthonormale Polynome und ein assoziiertes Momentenproblem, Math. Scand., 29 (1971) 104-112.

62. A transformation of series, Calcolo, 8 (1971) 255-272.

63. A note on the generalized Euler transformation, Computer Jour., 14 (1971) 437-441.

-1972-

64. Upon a convergence result in the theory of the Padé table, Trans. Amer. Math. Soc., 165 (1972) 239-249.

65. Some recent developments in the theories of continued fractions and the Padé table, in Proc. Intl. Conf. on Padé Approximants, Continued Fractions and Related Topics, Univ. of Colorado, Boulder, Colorado (1972), Rocky Mountain Jour. Math., 4 (1974) 297-323.

66. Upon some continuous prediction algorithms, Calcolo, 9 (1972) 197-278.

67. Sur les suites totalement monotones, Comptes Rendus Acad. Sci. (Paris), 275A (1972) 1065-1067.

68. Transformation de séries à l'aide de l'c-algorithme, Comptes Rendus Acad. Sci. (Paris), 275A (1972) 1351-1353.

69. Invariants associated with the epsilon algorithm and its first confluent form, Rend. Circ. Mat. (Palermo), 21 (1972) 31-41.

70. Hierarchies of arrays and function sequences associated with the epsilon algorithm and its first confluent form, Rend. Mat. (Roma), 5 (1972) 819-852.

71. Convergence acceleration by a method of intercalation, Computing, 9 (1972) 267-273.

-1973-

72. On the zeros of certain confluent hypergeometric functions, Proc. Amer. Math. Soc., 40 (1973) 173-182.

73. Accélération de la convergence de séries d'opérateurs en analyse numérique, Comptes Rendus Acad. Sci. (Paris), 276A (1973) 803-806.

-1974-

74. Extremal properties of Padé quotients, Acta Math. Sci. Hungaricae, 25 (1974) 291-298.

75. Sur l'équation aux dérivées de la surface de Padé, Comptes Rendus Acad. Sci. (Paris) 278A (1974) 847-850.

76. On the intersection of two classes of functions, Rev. Rom. Math. Pures App., 19 (1974) 949-959.

-1975-

77. Upon a class of functions connected with the approximate solution of operator equations, Ann. mat. pura appl., 104 (1975) 1-29.

78. Distributive rings permitting involution, Math. Balkanica, 5 (1975) 299-318.

-1976-

79. A convergence theory of some methods of integration, Jour. reine ang. Math. (Crelle's Journal), 285 (1976) 181-208.

80. The algebra of certain formal power series, Rivista Mat., (1976) Ser. 4, 2, 155-176.

-1977-

81. The calculus of finite differences over certain systems of numbers, Calcolo, 14 (1977) 303-341.

82. The transformation of series by the use of Padé quotients and more general approximants, in: Padé and rational approximation (Eds.: E.B. Saff and R.S. Varga) Academic Press (1977) 121-144.

-1978-

83. The evaluation of singular and highly oscillatory integrals, Calcolo, 15 Fasc. 4 bis, 1-103

-1980-

84. The work of E. B. Christoffel on the theory of continued fractions, and Remark upon developments in the theories of the moment problem and of quadrature subsequent to the work of Christoffel, in E. B. Christoffel Festschrift, Birkhäuser Verlag, Basel

-1981-

85. Numal in FORTRAN. 0: Introduction and summary. 1: Output subroutines; multi-length integers: double precision and complex arithmetic; merging and sorting operations. 2: Elementary operations of linear algebra; solution of linear equations; matrix inversion; evaluation of determinants. 3: Real matrix eigenvalue - vector determinations; singular value decompositions. 4: Linearly stored upper triangular parts of symmetric matrices; matrices with complex elements. 5: Auxiliary transformations of linear algebra. 6: Manipulations of polynomials and their evaluation; transformation of series. 7: Numerical solution of initial value problems by explicit and implicit methods; exponentially fitted methods. 8: Systems of second order equations; boundary value problems. 9: Numerical integration; Fourier series. 10: Approximation of Jacobian matrices;

zero finding algorithms; minimisation; parameter estimation. 11: Special functions

Communicationes Técnicas Nos. 48.0 - 48.11; IIMAS, Universidad Nacional Autonoma de Mexico

-To appear-

86. On rational approximations to the exponential function

87. The convergence of approximating fractions (Bol. Soc. Mat. Mex., 26 (1981) 57-71)