Avram Sidi   October 2023
Professor Emeritus
Computer Science Department
Technion - Israel Institute of Technology
Haifa 32000, Israel

CURRICULUM VITAE

Personal Data

Born: February 1, 1947, Tekirdağ, Turkey
Immigrated (to Israel): 1969
Marital Status: Married + 4 children
Home Address: 31 Zalman Shazar St., Haifa 3486131, Israel.

Education

1969   B.Sc. in Physics, Robert College, Istanbul, Turkey (graduated with high honors).

1972   M.Sc. in Theoretical Nuclear Physics, The Weizmann Institute of Science, Rehovot, Israel.

1978   Ph.D. in Applied Mathematics, Tel-Aviv University, Tel-Aviv, Israel.

Positions Previously Held

1971–1974   Assistant, Mathematics Department, Ben-Gurion University of the Negev, Beer-Sheva.

1973   Assistant, School of Engineering, Tel-Aviv University, Tel-Aviv.

1973–1975   Assistant, Department of Environmental Sciences, Tel-Aviv University, Tel-Aviv.

1976–1977   Instructor, Department of Geophysics and Planetary Sciences (previously, Department of Environmental Sciences), Tel-Aviv University, Tel-Aviv.

1977–1980   Lecturer, Computer Science Department, Technion - Israel Institute of Technology, Haifa.

1980–1983   Senior Lecturer, Computer Science Department, Technion - Israel Institute of Technology,Haifa.

1983–1993   Associate Professor, Computer Science Department, Technion - Israel Institute of Technology, Haifa.

1993–2015   Professor, Computer Science Department, Technion - Israel Institute of Technology, Haifa. (Holder of the Technion Administration Chair in Computer Science.)

Present Position

Professor Emeritus, Computer Science Department, Technion - Israel Institute of Technology, Haifa.

Visiting Positions

1981–1982	National Research Council Associate, National Aeronautics and Space Administration, Lewis Research Center, Cleveland, Ohio.
1982–1983	Universities Space Research Association Visiting Scientist, National Aeronautics and Space Administration, Lewis Research Center, Cleveland, Ohio.
1984	Universities Space Research Association Visiting Scientist, National Aeronautics and Space Administration, Lewis Research Center, Cleveland, Ohio (Summer).
1985	National Research Council Senior Associate, National Aeronautics and Space Administration, Lewis Research Center, Cleveland, Ohio (Summer).
1986–1992	Institute for Computational Mechanics in Propulsion Visiting Scientist, National Aeronautics and Space Administration, Lewis Research Center, Cleveland, Ohio (Summers).
1994–1995	Visiting Full Professor, Department of Mathematics, University of Connecticut, Storrs, Connecticut.
1995, 1996, 1998	Ohio Aerospace Institute Summer Faculty, National Aeronautics and Space Administration, Lewis Research Center, Cleveland, Ohio (Summers).
2006	Visiting Full Professor, School of Mathematics, Georgia Institute of Technology, Atlanta, Georgia (Fall semester).
2007	Visiting Full Professor, Department of Chemistry, Université Blaise Pascal, Clermont–Ferrand, France (February 2007).
2008	Visiting Full Professor, Department of Chemistry, Université Blaise Pascal, Clermont–Ferrand, France (May 2008).
2012	Visiting Full Professor, School of Mathematics, Georgia Institute of Technology, Atlanta, Georgia (Summer).
2013	Visiting Full Professor, School of Mathematics, Georgia Institute of Technology, Atlanta, Georgia (Fall semester).

Research Grants

United States–Israel Binational Science Foundation, grant no. 2005077.
Research project: Investigation of a class of vector-valued rational interpolants and orthogonal polynomials.
Principal investigators: Avram Sidi (Technion–Israel Institute of Technology), Eli Levin (Open University of Israel), and Doron S. Lubinsky (Georgia Institute of Technology).
Amount of grant: USD 60,000.
Duration of grant: October 2005 – September 2009 (4 years).

United States–Israel Binational Science Foundation, grant no. 2008399.
Research project: Asymptotics of rational interpolants, biorthogonal polynomials, and universality limits of random matrices.

Principal investigators: Avram Sidi (Technion–Israel Institute of Technology), Eli Levin (Open University of Israel), and Doron S. Lubinsky (Georgia Institute of Technology).
Amount of grant: USD 76,000.
Duration of grant: October 2009 – September 2013 (4 years). Extended to September 2014.

Journal editorial duties

Member of editorial board of *Advances in Numerical Analysis*. 2009–2013.

Conference organization

Moshe Israeli Memorial Conference, March 6, 2008. (Member of organizing committee.)

Moshe Israeli Memorial Conference, February 9, 2012. (Member of organizing committee.)

Molecular Electronic Structure at Troy, September 9–13, 2012, Çanakkale, Turkey. (Member of the international organizing committee, and organizer and chairman of the special session on extrapolation methods.)

Dagstuhl Seminar on Sparse Modelling and Multi-Exponential Analysis, June 14–19, 2015, Germany. (Organizers: Annie Cuyt, George Labahn, Avram Sidi)

MESBA 2016 Molecular Electronic Structure Buenos Aires, September 19–23, 2016, Buenos Aires, Argentina. (Member of the international organizing committee.)

BIRS-CMO Seminar on Sparse Interpolation, Rational Approximation and Exponential Analysis, October 30–November 4, 2016, Mexico. (Organizers: Annie Cuyt, George Labahn, Avram Sidi)

MESM 2018 Molecular Electronic Structure Metz, August 28–31, Metz, France. (Member of the international organizing committee.)

WMES 2020 Warsaw Molecular Electronic Structure virtual conference, September 1–4, 2020, Warsaw, Poland. (Member of the international organizing committee.)

Research Interests

1. Development and analysis of scalar convergence acceleration/extrapolation methods.

2. Development and analysis of extrapolation methods for the accurate computation of infinite-range integrals and for the summation of slowly convergent and divergent infinite series.

3. Numerical quadrature rules for singular integrals, analysis of product integration rules for singular integrals.

4. Generalized Euler–Maclaurin expansions for singular simple and multidimensional integrals.

5. Variable transformations for numerical integration.

6. Numerical integration over smooth surfaces in $\mathbb{R}^3$.

7. Numerical solution of Fredholm integral equations with singular kernels: (i) with kernels that have finite jump discontinuities, (ii) with weakly singular kernels, (iii) with Cauchy principal value kernels, and (iv) with hypersingular kernels.

8. Asymptotic expansions for various problems of extrapolation, numerical integration, and approximation theory.

9. Approximation theory, Padé approximants and generalizations and their convergence theory.

10. Biorthogonal polynomials.

11. Approximate inversion of Laplace transforms.

12. Exponential interpolation.

13. Development and analysis of convergence acceleration/extrapolation methods for sequences of vectors.

14. Vector-valued rational interpolation and approximation in the complex plane.

15. Numerical linear algebra: Solution of large scale linear systems and eigenvalue problems by Krylov subspace methods.

16. Development and analysis of Krylov subspace methods and semi-iterative methods for Drazin-inverse solution of singular linear systems.

PUBLICATIONS

Theses

1. 1972 M.Sc. thesis: "Exact solution of a solvable three-body model in one dimension, "Weizmann Institute of Science. Thesis adviser: Dr. Dan Agassi.

2. 1977 Ph.D. dissertation: "Exponential function approximations for Laplace transform inversion and development of non-linear methods for accelerating the convergence of infinite integrals and series," Tel-Aviv University. Thesis adviser: Prof. Ivor M. Longman.

Books

A. Sidi, *Practical Extrapolation Methods: Theory and Applications*. Number 10 in Cambridge Monographs on Applied and Computational Mathematics. Cambridge University Press, 2003. Hardback | 542 pages | ISBN: 0-521-66159-5.

A. Sidi, *Vector Extrapolation Methods with Applications*. Number 17 in SIAM series on Computational Science and Engineering. SIAM, 2017. Softcover | xiv + 433 pages | ISBN: 978-1-611974-95-9.

Encyclopedia Chapters

A. Sidi, "Methods for acceleration of convergence (extrapolation) of vector sequences." in *Wiley Encyclopedia of Computer Science and Engineering*, ed. B.W. Wah, Hoboken, New Jersey, Volume 3, pp. 1828–1846, 2009. ISBN: 978-0-471-38393-2.

A. Sidi, "Convergence acceleration." in *Encyclopedia of Applied and Computational Mathematics*, ed. B. Engquist, Springer-Verlag, Berlin, pp. 304–314, 2016.

Original Papers in Refereed Journals

Published

1. A Sidi, "Computation of the Chebyshev–Padé table," *J. Comp. Appl. Math., 1* (1975), pp. 69–71.

2. A. Sidi, "On the approximation of square-integrable functions by exponential series," *J. Comp. Appl. Math., 1* (1975), pp. 229–234

3. A. Sidi, "Best rational function approximation to Laplace transform inversion using a window function," *J. Comp. Appl. Math., 2* (1976), pp. 187–194.

4. A. Sidi, "Uniqueness of Padé approximants from series of orthogonal polynomials," *Math. Comp., 31* (1977), pp. 738–739.

5. A. Sidi, "Convergence properties of some non-linear sequence transformations," *Math. Comp., 33* (1979), pp. 315–326.

6. A. Sidi, "Some properties of a generalization of the Richardson extrapolation process," *J. Inst. Maths. Applics., 24* (1979), pp. 327–346.

7. A. Sidi, "Some aspects of two-point Padé approximants," *J. Comp. Appl. Math., 6* (1980), pp. 9–17.

8. A. Sidi, "Analysis of convergence of the T-transformation for power series," *Math. Comp., 35* (1980), pp. 833–850.

9. A. Sidi, "Numerical quadrature and non-linear sequence transformations; unified rules for the efficient computation of integrals with algebraic and logarithmic end-point singularities," *Math. Comp., 35* (1980), pp. 851–874.

10. A. Sidi, "Extrapolation methods for oscillatory infinite integrals," *J. Inst. Maths. Applics., 26* (1980), pp. 1–20.

11. A. Sidi, "A new method for deriving Padé approximants for some hypergeometric functions," *J. Comp. Appl. Math., 7* (1981), pp. 37–40.

12. D. Levin and A. Sidi, "Two new classes of non-linear transformations for accelerating the convergence of infinite integrals and series," *Appl. Math. Comp., 9* (1981), pp. 175–215.

13. A. Sidi, "Interpolation at equidistant points by a sum of exponential functions," *J. Approx. Theory, 34* (1982), pp. 194–210.

14. A. Sidi, "Numerical quadrature rules for some infinite range integrals," *Math. Comp., 38* (1982), pp. 127–142.

15. A. Sidi, "An algorithm for a special case of a generalization of the Richardson extrapolation process," *Numer. Math., 38* (1982), pp. 299–307.

16. A. Sidi, "The numerical evaluation of very oscillatory infinite integrals by extrapolation," *Math. Comp., 38* (1982), pp. 517–529.

17. A. Sidi, "Converging factors for some asymptotic moment series that arise in numerical quadrature," *J. Austral. Math. Soc. (Series B), 24* (1982), pp. 223–233.

18. A. Sidi and D. Levin, "Rational approximations from the *d*-transformation," *IMA J. Numer. Anal., 2* (1982), pp. 153–167.

19. A. Sidi and D.S. Lubinsky, "On the zeros of some polynomials that arise in numerical quadrature and convergence acceleration," *SIAM J. Numer. Anal., 20* (1983), pp. 400–405.

20. A. Sidi and D. Levin, "Prediction properties of the t-transformation," *SIAM J. Numer. Anal., 20* (1983), pp. 589–598.

21. D.S. Lubinsky and A. Sidi, "Convergence of linear and non-linear Padé approximants from series of orthogonal polynomials," *Transactions of AMS, 278* (1983), pp. 333–345.

22. A. Sidi, "Euler–Maclaurin expansions for integrals over triangles and squares of functions having algebraic/logarithmic singularities along and edge," *J. Approx. Theory, 39* (1983), pp. 39–53.

23. A. Sidi and D.S. Lubinsky, "Convergence of exponential interpolation for completely bounded functions," *J. Approx. Theory, 39* (1983), pp. 185–201.

24. A. Sidi, "Asymptotic expansion of Mellin transforms and analogs of Watson's lemma," *SIAM J. Math. Anal., 16* (1985), pp. 896–906.

25. A. Sidi, "Numerical evaluation of a Cauchy principal value integral that arises in a problem involving the generation of instability waves," *J. Comp. Phys., 59* (1985), pp. 388–395.

26. A. Sidi, "Interpolation by a sum of exponential functions when some exponents are preassigned," *J. Math. Anal. Appl., 112* (1985), pp. 151–164.

27. A. Sidi, W.F. Ford, and D.A. Smith, "Acceleration of convergence of vector sequences," *SIAM J. Numer. Anal., 23* (1986), pp. 178–196.

28. A. Sidi, "Convergence and stability properties of minimal polynomial and reduced rank extrapolation algorithms," *SIAM J. Numer. Anal., 23* (1986), pp. 197–209.

29. D.S. Lubinsky and A. Sidi, "Convergence of product integration rules for functions with interior and end-point singularities over bounded and unbounded intervals," *Math. Comp., 46* (1986), pp. 229–245.

30. A. Sidi, "Borel summability and converging factors for some everywhere divergent series," *SIAM J. Math. Anal., 17* (1986), pp. 1222–1231.

31. A. Sidi, C. Sulem, and P.L. Sulem, "Long time behavior of the solution of a generalized Korteweg-deVries equation," *Acta Applicandae Mathematicae, 7* (1986), pp. 35–47.

32. A. Sidi, "Extrapolation methods for divergent oscillatory infinite integrals that are defined in the sense of summability," *J. Comp. Appl. Math., 17* (1987), pp. 105–114. (Invited paper for special issue on Numerical Integration.)

33. D.A. Smith, W.F. Ford, and A. Sidi, "Extrapolation methods for vector sequences," *SIAM Rev., 29* (1987), pp. 199–233.

34. W.F. Ford and A. Sidi, "An algorithm for a generalization of the Richardson extrapolation process," *SIAM J. Numer. Anal., 24* (1987), pp. 1212–1232.

35. A. Sidi and J. Bridger, "Convergence and stability analyses for some vector extrapolation methods in the presence of defective iteration matrices," *J. Comp. Appl. Math., 22* (1988), pp. 35–61.

36. A. Sidi, "Extrapolation vs. projection methods for linear systems of equations," *J. Comp. Appl. Math., 22* (1988), pp. 71–88.

37. A. Sidi, "A user-friendly extrapolation method for oscillatory infinite integrals," *Math. Comp., 51* (1988), pp. 249–266.

38. W.F. Ford and A. Sidi, "Recursive algorithms for vector extrapolation methods," *Appl. Numer. Math., 4* (1988), pp. 477–489.

39. A. Sidi and M. Israeli, "Quadrature methods for periodic singular and weakly singular Fredholm integral equations," *J. Sci. Comput., 3* (1988), pp. 201–231.

40. A. Sidi, "On extensions of the power method for normal operators," *Linear Algebra Appl., 120* (1989), pp. 207–224.

41. A. Sidi, "Comparison of some numerical quadrature formulas for weakly singular periodic Fredholm integral equations," *Computing, 43* (1989), pp. 159–170.

42. A. Sidi, "Application of vector extrapolation methods to consistent singular linear systems," *Appl. Numer. Math., 6* (1989/90), pp. 487–500.

43. A. Sidi, "On rates of acceleration of extrapolation methods for oscillatory infinite integrals," *BIT, 30* (1990), pp. 347–357.

44. A. Sidi, "On a generalization of the Richardson extrapolation process," *Numer. Math., 57* (1990), pp. 365–377.

45. A. Sidi, "Quantitative and constructive aspects of the generalized Koenig's and de Montessus's theorems for Padé approximants," *J. Comp. Appl. Math., 29* (1990), pp. 257–291.

46. A. Sidi and W.F. Ford, "Quotient-difference type generalizations of the power method and their analysis," *J. Comp. Appl. Math., 32* (1990), pp. 261–272.

47. A. Sidi, "Efficient implementation of minimal polynomial and reduced rank extrapolation methods," *J. Comp. Appl. Math., 36* (1991), pp. 305–337.

48. M. Kaminski and A. Sidi, "Solution of an integer programming problem related to convergence of rows of Padé table," *Appl. Numer. Math., 8* (1991), pp. 217–223.

49. A. Sidi, "Development of iterative techniques and extrapolation methods for Drazin inverse solution of consistent or inconsistent singular linear systems," *Linear Algebra Appl., 167* (1992), pp. 171–203.

50. I. Bar-On and A. Sidi, "New algorithms for polynomial and trigonometric interpolation on parallel computers," *BIT, 32* (1992), pp. 464–480.

51. A. Sidi, "Convergence of intermediate rows of minimal polynomial and reduced rank extrapolation tables," *Numer. Algorithms, 6* (1994), pp. 229–244.

52. A. Sidi, "Rational approximations from power series of vector-valued meromorphic functions," *J. Approx. Theory, 77* (1994), pp. 89–111.

53. D. S. Lubinsky and A. Sidi, "Strong asymptotics for polynomials biorthogonal to powers of $\log x$," *Analysis, 14* (1994), pp. 341–379.

54. A. Sidi, "Acceleration of convergence of (generalized) Fourier series by the d-transformation," *Annals of Numer. Math., 2* (1995), pp. 381–406.

55. A. Sidi, "Application of vector-valued rational approximations to the matrix eigenvalue problem and connections with Krylov subspace methods," *SIAM J. Matrix Anal. Appl., 16* (1995), pp. 1341–1369.

56. A. Sidi, "Convergence analysis for a generalized Richardson extrapolation process with an application to the $d^{(1)}$-transformation on convergent and divergent logarithmic sequences," *Math. Comp., 64* (1995), pp. 1627–1657.

57. Y. Shapira, A. Sidi, and M. Israeli, "Optimal error bounds for convergents of a family of continued fractions," *J. Math. Anal. Appl., 197* (1996), pp. 767–773.

58. Y. Shapira, M. Israeli, and A. Sidi, "Towards automatic multigrid algorithms for SPD, non-symmetric and indefinite problems," *SIAM J. Sci. Comput., 17* (1996), pp. 439–453.

59. A. Sidi, "Further results on convergence and stability of a generalization of the Richardson extrapolation process," *BIT, 36* (1996), pp. 143–157.

60. A. Sidi, "Extension and completion of Wynn's theory on convergence of columns of the epsilon table," *J. Approx. Theory, 86* (1996), pp. 21–40.

61. T. Hasegawa and A. Sidi, "An automatic integration procedure for infinite range integrals involving oscillatory kernels," *Numer. Algorithms, 13* (1996), pp. 1–19.

62. A. Sidi, "Computation of infinite integrals involving Bessel functions of arbitrary order by the $\bar{D}$-transformation," *J. Comp. Appl. Math., 78* (1997), pp. 125–130.

63. A. Sidi, "A complete convergence and stability theory for a generalized Richardson extrapolation process," *SIAM J. Numer. Anal., 34* (1997), pp. 1761–1778.

64. J.-J. Climent, M. Neumann, and A. Sidi, "A semi-iterative method for real spectrum singular linear systems with arbitrary index," *J. Comp. Appl. Math., 87* (1997), pp. 21–38.

65. A. Sidi, Solution to "A family of matrix problems: Problem 97-11. (Proposer: D. Givoli)," *SIAM Rev., 40* (1998), pp. 718–723.

66. A. Sidi, "Krylov subspace methods for eigenvalues with special properties and their analysis for normal matrices," *Linear Algebra Appl., 280* (1998), pp. 129–162.

67. A. Sidi and Y. Shapira, "Upper bounds for convergence rates of acceleration methods with initial iterations," *Numer. Algorithms, 18* (1998), pp. 113–132.

68. A. Sidi and J.A. Pennline, "Improving the accuracy of quadrature method solutions of Fredholm integral equations that arise from nonlinear two-point boundary value problems," *J. Integral Eqs. Appl., 11* (1999), pp. 103–139.

69. A. Sidi, "A unified approach to Krylov subspace methods for Drazin-inverse solution of singular nonsymmetric linear systems," *Linear Algebra Appl., 298* (1999), pp. 99–113.

70. Y. Shapira, M. Israeli, A. Sidi, and U. Zrahia, "Preconditioning spectral element schemes for definite and indefinite problems," *Numer. Methods Partial Differential Eqs., 15* (1999), pp. 535–543.

71. A. Sidi, "Further convergence and stability results for the generalized Richardson extrapolation GREP$^{(1)}$ with an application to the $D^{(1)}$-transformation for infinite integrals," *J. Comp. Appl. Math., 112* (1999), pp. 269–290. (Invited paper for the special issue: Numerical Evaluation of Integrals.)

72. A. Sidi, "Extrapolation methods and derivatives of limits of sequences," *Math. Comp., 69* (2000), pp. 305–323.

73. A. Sidi and D. Givoli, "Stability and accuracy of optimal local non-reflecting boundary conditions," *Appl. Numer. Math., 33* (2000), pp. 327–340.

74. A. Sidi, "The Richardson extrapolation with a harmonic sequence of collocation points," *SIAM J. Numer. Anal., 37* (2000), pp. 1729–1746.

75. A. Averbuch, E. Braverman, R. Coifman, M. Israeli, and A. Sidi, "Efficient computation of oscillatory integrals via adaptive multiscale local Fourier bases," *Appl. Comput. Harmonic Anal., 9* (2000), pp. 19–53.

76. A. Sidi and V. Kluzner, "A Bi-CG type iterative method for Drazin-inverse solution of singular inconsistent nonsymmetric linear systems of arbitrary index," *ELA, 6* (1999/2000), pp. 72–94.

77. A. Sidi, "The generalized Richardson extrapolation process GREP$^{(1)}$ and computation of derivatives of limits of sequences with applications to the $d^{(1)}$-transformation," *J. Comp. Appl. Math., 122* (2000), pp. 251–273. (Invited paper for the special issue: Numerical Analysis 2000, Vol. II: Interpolation and Extrapolation.)

78. A. Sidi, "DGMRES: A GMRES type algorithm for Drazin-inverse solution of singular non-symmetric linear systems," *Linear Algebra Appl., 335* (2001), pp. 189–204.

79. D. Levin and A. Sidi, "Extrapolation methods for infinite multiple series and integrals," *J. Comput. Methods Sci. Engrg., 1* (2001), pp. 167–184. (Invited paper for special volume.)

80. A. Sidi, "New convergence results on the generalized Richardson extrapolation process GREP$^{(1)}$ for logarithmic sequences," *Math. Comp., 71* (2002), pp. 1569–1596.

81. A. Sidi and Y. Kanevsky, "Orthogonal polynomials and semi-iterative methods for the Drazin-inverse solution of singular linear systems," *Numer. Math., 93* (2003), pp. 563–581.

82. A. Sidi, "A convergence and stability study of the iterated Lubkin transformation and the θ-algorithm." *Math. Comp., 72* (2003), pp. 419–433.

83. A. Sidi, "A zero-cost preconditioner for a class of indefinite linear systems." *WSEAS Transactions on Mathematics, 2* (2003), pp. 142–150.

84. A. Sidi, "Euler–Maclaurin expansions for integrals with endpoint singularities: A new perspective." *Numer. Math., 98* (2004), pp. 371–387.

85. A. Sidi, "A new approach to vector-valued rational interpolation." *J. Approx. Theory, 130* (2004), pp. 177–187.

86. A. Sidi, "Analysis of Atkinson's variable transformation for numerical integration over smooth surfaces in $I\!\!R^3$." *Numer. Math., 100* (2005), pp. 519–536.

87. A. Sidi, "Numerical integration over smooth surfaces in $I\!\!R^3$ via class $\mathcal{S}_m$ variable transformations. Part I: Smooth integrands." *Appl. Math. Comp., 171* (2005), pp. 646–674.

88. A. Sidi, "Application of class $\mathcal{S}_m$ variable transformations to numerical integration over surfaces of spheres." *J. Comp. Appl. Math., 184* (2005), pp. 475–492.

89. A. Sidi, "Numerical integration over smooth surfaces in $I\!\!R^3$ via class $\mathcal{S}_m$ variable transformations. Part II: Singular integrands." *Appl. Math. Comp., 181* (2006), pp. 291–309.

90. A. Sidi, "Extension of a class of periodizing variable transformations for numerical integration." *Math. Comp., 75* (2006), pp. 327–343.

91. A. Sidi, "Unified treatment of regula falsi, Newton–Raphson, secant, and Steffensen methods for nonlinear equations." *J. Online Math. Appl., 6* (2006).
http://mathdl.maa.org/mathDL/4/?pa=content&sa=viewDocument&nodeID=1152
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92. A. Sidi, "Algebraic properties of some new vector-valued rational interpolants." *J. Approx. Theory, 141* (2006), pp. 142–161.

93. A. Sidi, "A challenging test for convergence accelerators: Summation of a series with a special sign pattern." *Appl. Math. E-Notes, 6* (2006), pp. 225–234.

94. A. Sidi, "A novel class of symmetric and nonsymmetric periodizing variable transformations for numerical integration." *J. Sci. Comput., 31* (2007), pp. 391–417.

95. A. Sidi and D.S. Lubinsky, "Biorthogonal polynomials and numerical integration formulas for infinite intervals." *J. Numer. Anal. Indust. Appl. Math., 2* (2007), pp. 209–226.

96. A. Sidi, "Generalization of the secant method for nonlinear equations." *Appl. Math. E-Notes, 8* (2008), pp. 115–123.

97. A. Sidi, "Further extension of a class of periodizing variable transformations for numerical integration." *J. Comp. Appl. Math., 221* (2008), pp. 132–149.

98. A. Sidi, "A de Montessus type convergence study for a vector-valued rational interpolation procedure." *Israel J. Math., 163* (2008), pp. 189–215.

99. D.S. Lubinsky and A. Sidi, "Zero distribution of composite polynomials and polynomials biorthogonal to exponentials." *Constr. Approx., 28* (2008), pp. 343–371.

100. A. Sidi, "Vector extrapolation methods with applications to solution of large systems of equations and to PageRank computations." *Comp. & Maths. with Applics. 56* (2008), pp. 1–24.

101. A. Sidi, "A de Montessus type convergence study of a least-squares vector-valued rational interpolation procedure." *J. Approx. Theory, 155* (2008), pp. 75–96.

102. A. Sidi, "Asymptotic expansions of Gauss–Legendre quadrature rules for integrals with endpoint singularities." *Math. Comp., 78* (2009), pp. 241–253.

103. A. Sidi, "Variable transformations and Gauss–Legendre quadrature for integrals with endpoint singularities." *Math. Comp., 78* (2009), pp. 1593–1612.

104. G. Rosman, L. Dascal, A. Sidi, and R. Kimmel, "Efficient Beltrami image filtering via vector extrapolation methods." *SIAM J. Imaging Sciences, 2* (2009), pp. 858–878.

105. A. Sidi, "Asymptotic expansions of Legendre series coefficients for functions with endpoint singularities." *Asymptotic Anal., 65* (2009), pp. 175–190.

106. D.S. Lubinsky and A. Sidi, "Positive interpolatory quadrature rules generated by some biorthogonal polynomials." *Math. Comp., 79* (2010), pp. 845–855.

107. A. Sidi, "Asymptotic analysis of a generalized Richardson extrapolation process on linear sequences." *Math. Comp., 79* (2010), pp. 1681–1695.

108. A. Sidi, "A de Montessus type convergence study of a least-squares vector-valued rational interpolation procedure II." *Comput. Methods Funct. Theory, 10* (2010), pp. 223–247.

109. A. Sidi, "A simple approach to asymptotic expansions for Fourier integrals of singular functions." *Appl. Math. Comp., 216* (2010), pp. 3378–3385.

110. A. Sidi, " Survey of numerical stability issues in convergence acceleration." *Appl. Numer. Math., 60* (2010), pp. 1395–1410.

111. A. Sidi, "Asymptotic expansions of Legendre series coefficients for functions with interior and endpoint singularities." *Math. Comp., 80* (2011), pp. 1663–1684.

112. A. Sidi, "Asymptotic expansion of Mellin transforms in the complex plane." *Intern. J. Pure and Appl. Math., 71* (2011), pp. 465–480.

113. A. Sidi and P.E. Hoggan, "Asymptotics of modified Bessel functions of high order." *Intern. J. Pure and Appl. Math., 71* (2011), pp. 481–498.

114. A. Sidi, "Acceleration of convergence of general linear sequences by the Shanks transformation." *Numer. Math., 119* (2011), pp. 725–764.

115. A. Sidi, "Review of two vector extrapolation methods of polynomial type with applications to large-scale problems." *J. Comput. Sci., 3* (2012), pp. 92–101. (Invited paper for the special issue: Scientific Computation Methods and Applications.)

116. A. Sidi, "A user-friendly extrapolation method for computing infinite-range integrals of products of oscillatory functions." *IMA J. Numer. Anal., 32* (2012), pp. 602–631.

117. A. Sidi, "Euler–Maclaurin expansions for integrals with arbitrary algebraic endpoint singularities." *Math. Comp., 81* (2012), pp. 2159–2173.

118. A. Sidi, "Euler–Maclaurin expansions for integrals with arbitrary algebraic-logarithmic endpoint singularities." *Constr. Approx., 36* (2012), pp. 331–352.

119. A. Sidi, "Compact numerical quadrature formulas for hypersingular integrals and integral equations." *J. Sci. Comput., 54* (2013), pp. 145–176.

120. D.S. Lubinsky and A. Sidi, "Polynomials biorthogonal to dilations of measures, and their asymptotics." *J. Math. Anal. Appl., 397* (2013), pp. 91–108.

121. A. Sidi, D. Pinchon, and P.E. Hoggan, "Asymptotic expansions of Barnett–Coulson–Löwdin functions of high order." *Adv. Quantum Chem., 68* (2014), pp. 43–76.

122. A. Sidi, "Richardson extrapolation on some recent numerical quadrature formulas for singular and hypersingular integrals and its study of stability." *J. Sci. Comput., 60* (2014), pp. 141–159.

123. A. Sidi, "Biorthogonal polynomials and numerical quadrature formulas for some finite-range integrals with symmetric weight functions." *J. Comp. Appl. Math., 272* (2014), pp. 221–238.

124. A. Sidi, "Analysis of errors in some recent numerical quadrature formulas for periodic singular and hypersingular integrals via regularization." *Appl. Numer. Math., 81* (2014), pp. 30–39.

125. D.S. Lubinsky, A. Sidi, and H. Stahl, "Asymptotic zero distribution of biorthogonal polynomials." *J. Approx. Theory, 190* (2015), 26-49.

126. A. Sidi, "SVD-MPE: An SVD-based vector extrapolation method of polynomial type." *Applied Mathematics., 7* (2016), pp. 1260–1278. (Special Issue on Applied Iterative Methods)

127. A. Sidi, "On a vectorized version of a generalized Richardson extrapolation process." *Numer. Algorithms, 74* (2017), pp. 937–949.

128. A. Sidi, "Minimal polynomial and reduced rank extrapolation methods are related." *Adv. Comput. Math., 43* (2017), pp. 151–170.

129. A. Sidi, "A de Montessus type convergence study for a vector-valued rational interpolation procedure of epsilon class." *Jaen J. Approx., 9* (2017), pp. 85–104.

130. A. Sidi, "Recent developments in asymptotic expansions from numerical analysis and approximation theory." *Adv. Quantum Chem., 76* (2018), pp. 35–57.

131. A. Sidi, "A further property of functions in class $\mathbf{B}^{(m)}$: An application of Bell polynomials." *J. Math. Research, 11* (2019), pp. 1–11.

132. A. Sidi, "A convergence study for reduced rank extrapolation on nonlinear systems." *Numer. Algorithms, 84* (2020), pp. 957–982.

133. A. Sidi, "Acceleration of convergence of some infinite sequences $\{A_n\}$ whose asymptotic expansions involve fractional powers of n via the $\tilde{d}^{(m)}$ transformation." *Numer. Algorithms, 85* (2020), pp. 1409–1445.

134. A. Sidi, "Vector versions of Prony's algorithm and vector-valued rational approximations." *Adv. Comput. Math., 46* (2020), article number 30. (25 pages)

135. A. Sidi, "Unified compact numerical quadrature formulas for Hadamard finite parts of singular integrals of periodic functions." *Calcolo, 58* (2021), article number 22. (24 pages)

136. A. Sidi, "Exactness and convergence properties of some recent numerical quadrature formulas for supersingular integrals of periodic functions." *Calcolo, 58* (2021), article number 36. (15 pages)

137. A. Sidi, "Application of a generalized secant method to nonlinear equations with complex roots." *Axioms, 10* (2021), article number 169. (11 pages)

138. D.S. Lubinsky and A. Sidi, "Some biorthogonal polynomials arising in numerical analysis and approximation theory." *J. Comp. Appl. Math., 403* (2022), article number 113842. (13 pages)

139. A. Sidi, " PVTSI$^{(m)}$: A novel approach to computation of Hadamard finite parts of nonperiodic singular integrals." *Calcolo, 59* (2022), article number 7. (36 pages)

140. A. Sidi, " Exponential convergence of some recent numerical quadrature methods for Hadamard finite parts of singular integrals of periodic analytic functions." *Calcolo, 59* (2022), article number 42. (24 pages)

141. A. Sidi, "Spectrally accurate numerical quadrature formulas for a class of periodic Hadamard Finite Part integrals by regularization." *Appl. Numer. Math., 184* (2023), pp. 171–196.

142. A. Sidi, "Spectrally accurate numerical quadrature formulas for a class of algebraically singular periodic Hadamard Finite Part integrals by regularization." *J. Comp. Appl. Math., 439* (2024), article number 115581. (20 pages) (In the special issue: Advances in Quadrature, Cubature, and the Solution of Integral Equations with Applications.)

Papers in Conference Proceedings

Original Papers in Refereed Conferences (not published elsewhere)

143. A. Sidi, "The Padé table and its connection with some weak exponential function approximations to Laplace transform inversion," in *Padé Approximation and its Applications*, Amsterdam (1980), (eds. M.G. de Bruin and H. van Rossum), pp. 352–362.

144. G. Fainstein, A. Sidi, M. Israeli, and Y. Tsur-Lavie, "Application of boundary integral equations to the solution of stresses around a shallow circular hole," in *Proceedings of 28th U.S. Symposium in Rock Mechanics*, Tucson, Arizona (1987), pp. 745–755.

145. A. Sidi, "A new variable transformation for numerical integration," in *Numerical Integration IV*, (1993), (eds. H. Brass and G. Hämmerlin), pp. 359–373. International Series of Numerical Mathematics, No. 112, Birkhäuser, Basel, 1993.

146. Y. Shapira, M. Israeli, and A. Sidi, "An automatic multigrid method for the solution of sparse linear systems," in *Sixth Copper Mountain Conference on Multigrid Methods*, N.D. Melson, T.A. Manteuffel, and S.F. McCormick (eds.), NASA Conference Publication 3224, (1993), pp. 567–582.

147. F. Su, T. Hasegawa, and A. Sidi, "An automatic integration of infinite range integrals involving Bessel functions," in *Proceedings of 2nd WSEAS Annual Multiconference on Applied and Theoretical Mathematics, Cairns, Australia* (2001), pp. 43–48.

Survey Papers in Refereed Conferences

148. A. Sidi, "Generalizations of Richardson extrapolation with applications to numerical integration," in *Numerical Integration III*, (1988), (eds. H. Brass and G. Hämmerlin), pp. 237–250. International Series of Numerical Mathematics, No. 85, Birkhäuser, Basel, 1988.

149. A. Sidi, "Application of extrapolation methods to numerical solution of Fredholm integral equations related to boundary value problems," in *Computational Science–ICCS 2004, 4th International Conference, Kraków, June 2004, Proceedings, Part IV*, (eds. M. Bubak, G.D. van Albada, P.M.A. Sloot, and J.J. Dongarra), pp. 402–409. Lecture Notes in Computer Science No. 3039, Springer Verlag, Berlin, 2004.

150. A. Sidi, "An overview of vector extrapolation methods with applications to solutions of large systems of equations and to PageRank computations," in *ICCSE 2005: International Conference on Computational Science and Engineering, Istanbul'05*, (eds. H. Dag and Y. Deng), pp. IT43–IT55. ISBN 975-561-266-1.

Short Communications in Conference Proceedings

151. D. Levin and A. Sidi, "Non-linear transformations for accelerating the convergence of infinite integrals and series," in *International Symposium on Innovative Numerical Analysis in Applied Engineering Science*, Versailles, (1977), pp. 3.47–3.50.

152. D. Levin and A. Sidi, "An autoregressive model with varying coefficients with application to prediction," in *Proceedings of the 4th International Conference on Mathematical Modeling*, Zurich, (1983), pp. 58–61.

153. I. Bar-On and A. Sidi, "New algorithms for polynomial and trigonometric interpolation on parallel computers," in *Proceedings of IMACS 13th World Congress in Computational and Applied Mathematics*, Dublin (1991), pp. 776–779.

154. A. Sidi, "Computation of oscillatory infinite integrals by extrapolation methods," in *Numerical Integration: Recent Developments, Software and Applications* (1991), (eds. T.O. Espelid and A. Genz), pp. 349–351.

155. A. Sidi, "Application of vector-valued rational approximations to the matrix eigenvalue problem and connections with Krylov subspace methods," *Proceedings of the Cornelius Lanczos International Centenary Conference* (1994), (eds. J.D. Brown, M.T. Chu, D.C. Ellison, and R.J. Plemmons), pp. 246–248.

156. A. Sidi and Y. Shapira, "Upper bounds for convergence rates of vector extrapolation methods on linear systems with initial iterations," *Proceedings of the Cornelius Lanczos International Centenary Conference* (1994), (eds. J.D. Brown, M.T. Chu, D.C. Ellison, and R.J. Plemmons), pp. 285–287.

157. A. Sidi, "Variable transformations in numerical integration," in *Proc. Appl. Math. Mech.*, *7* (2007), pp. 2020019–2020020. (Proceedings of the International Conference on Industrial and Applied Mathematics 2007.)

Selected Unpublished Technical Reports

1. A. Sidi and D.S. Lubinsky, "Convergence of approximate inversion of Laplace transforms using Padé and rational approximations,"

International Congresses

1977 International Symposium on Innovative Numerical Analysis in Applied Engineering Science, Versailles, France.

Paper presented (D. Levin and A. Sidi) "Non-linear transformations for accelerating the convergence of infinite integrals and series."

1979 Dundee Biennial Conference on Numerical Analysis, Dundee, Scotland, United Kingdom.

Paper presented (A. Sidi) "A unified approach to the numerical treatment of integrals with end-point singularities."

1980 Annual Meeting of the Israeli Society for the Application of Mathematics, Safed, Israel.

Paper presented (A. Sidi) "Unified numerical quadrature formulas for accurate evaluation of finite and infinite range integrals with end-point singularities."

1980 Workshop on Approximation Theory, Technion - Israel Institute of Technology, Haifa, Israel.

Paper presented (A. Sidi and D. Levin) "Rational approximations from the d-transformation."

1980 Padé and Rational Approximation, Theory and Applications, Amsterdam, Holland.

Papers presented (i) (A. Sidi and D. Levin) "Rational approximations from the d-transformation." (ii) (A. Sidi) "The Padé table and its connection with some weak exponential function approximations to Laplace transform inversion."

1981 Annual Meeting of the Israeli Society for the Application of Mathematics, Rehovot, Israel.

Paper presented (A. Sidi) "The use of extrapolation in evaluating oscillatory infinite integrals."

1982 88th Annual Meeting of the American Mathematical Society, Cincinnati, Ohio, USA.

Paper presented (A. Sidi) "Euler–Maclaurin expansions for integrals over triangles and squares with singularities along an edge." AMS abstract #792-65-474.

1982 SIAM 30th Anniversary Meeting, Stanford University, Stanford, California, USA.

Paper presented (A. Sidi, W.F. Ford, and D.A. Smith) "Acceleration of convergence of vector sequences."

1983 Annual Meeting of the Canadian Applied Mathematics Society, University of Toronto, Toronto, Canada. (Participation by personal invitation.)

Paper presented (A. Sidi) "Asymptotic expansion of Mellin transforms and analogues of Watson's lemma."

1983 Fourth International Conference on Modeling, Swiss Federal Institute of Technology (ETH), Zurich, Switzerland.

Paper presented (D. Levin and A. Sidi) "An autoregressive model with varying coefficients with application to prediction."

1983 The National Seminar in Approximation Theory, Tel-Aviv University, Tel-Aviv, Israel. (Invited speaker)

Paper presented (A. Sidi) "Asymptotic expansion of Mellin transforms."

1984 Conference on Matrix Theory, Haifa 1984, Technion - Israel Institute of Technology, Haifa, Israel.

Paper presented (W.F. Ford and A. Sidi) "Application of Sylvester's determinant identity to the recursive solution of a generalized Richardson extrapolation process."

1985 Joint French–Israeli Mathematical Symposium on Linear and Non-Linear Partial Differential Equations, Numerical Analysis, Geometry of Banach Spaces, Jerusalem, Israel. (Participation by personal invitation)

Paper presented (A. Sidi and M. Israeli) "Extrapolation methods for periodic singular and weakly singular integrals and their application to integral equations."

1986 Annual Meeting of the Israel Mathematical Union, Haifa, Israel.

Paper presented (A. Sidi) "Extrapolation methods for vector sequences."

1986 Institute for Computational Mechanics in Propulsion Workshop, NASA–Lewis Research Center, Cleveland, Ohio, USA.

Paper presented (A. Sidi) "Application of extrapolation methods to fluid mechanics codes."

1987 Nonlinear Numerical Methods and Rational Interpolation, University of Antwerp, Belgium.

Paper presented (A. Sidi and J. Bridger) "Recent Developments in vector extrapolation methods."

1987 28th U.S. Symposium in Rock Mechanics, Tucson, Arizona, USA.

Paper presented (G. Fainstein, A. Sidi, M. Israeli, and Y. Tsur-Lavie) "Application of boundary integral equations to the solution of stresses around a shallow circular hole."

1987 5th International Conference on Numerical Methods in Laminar and Turbulent Flow, Montreal, Quebec, Canada. (Invited speaker)

Paper presented (A. Sidi) "Acceleration methods for vector sequences with applications to fluid mechanics."

1987 Numerical Integration, Oberwolfach, Germany. (Participation by personal invitation.)

Paper presented (A. Sidi) "A user-friendly extrapolation method for oscillatory infinite integrals."

1988 National Seminar in Approximation Theory, Tel-Aviv University, Tel-Aviv, Israel. (Invited speaker)

Paper presented (A. Sidi) "A refinement of the generalized Koenig's theorem."

1988 The Fourth Haifa Matrix Conference, Technion - Israel Institute of Technology, Haifa, Israel.

Paper presented (A. Sidi) "On extensions of the power method for normal operators."

1988 Constructive Approximation Theory and Applications, Jerusalem, Israel. (Participation by personal invitation.)

Paper presented (A. Sidi) "Quantitative aspects of the generalized Koenig's and de Montessus's theorems for Padé approximants."

1988 Practical Treatment of Integral Equations, Boundary Element Methods, and Singular Equations, Oberwolfach, Germany. (Participation by personal invitation.)

Paper presented (A. Sidi) "New quadrature methods for singular and weakly singular periodic integral equations with applications."

1989 The Fifth Haifa Matrix Conference, Technion - Israel Institute of Technology, Haifa, Israel.

Paper presented (A. Sidi) "New convergence results for a generalization of the power method for normal matrices."

1990 AIAA 28th Aerospace Sciences Meeting, Reno, Nevada, USA.

Paper presented (A. Sidi and M.L. Celestina) "Convergence acceleration for vector sequences and applications to computational fluid dynamics." Paper No. 90-0338.

1990 Annual Meeting of the Israel Mathematical Union, Haifa, Israel. (Invited speaker.)

Paper presented (A. Sidi) "Recent developments in acceleration of convergence methods for vector iterative processes."

1990 Approximation, Interpolation and Summability, Tel-Aviv, Israel. (Participation by personal invitation.)

Paper presented (A. Sidi) "Vector-valued rational approximations and applications to numerical linear algebra."

1990 The Sixth Haifa Matrix Conference, Technion - Israel Institute of Technology, Haifa, Israel.

Paper presented (A. Sidi) "Iterative techniques and extrapolation methods for singular linear systems."

1990 Householder Symposium XI on Numerical Algebra, Tylosand, Sweden. (Participation by personal invitation.)

Paper presented (A. Sidi) "Application of vector extrapolation methods to consistent singular linear systems."

1991 Numerical Linear Algebra, Oberwolfach, Germany. (Participation by personal invitation.)

Paper presented (A. Sidi) "Recent developments in convergence acceleration methods for vector sequences and applications to linear and nonlinear systems."

1991 The Seventh Haifa Matrix Conference, Technion - Israel Institute of Technology, Haifa, Israel.

Paper presented (A. Sidi) "Rational approximations from power series of vector-valued meromorphic functions with an application to matrix eigenvalue problems."

1991 NATO Advanced Research Workshop in Numerical Integration, Bergen, Norway. (Participation by personal invitation.)

Paper presented (A. Sidi) "Computation of Oscillatory infinite integrals by extrapolation methods."

1991 IMACS 13th World Congress on Computational and Applied Mathematics, Trinity College, Dublin, Ireland.

Paper presented (I. Bar-On and A. Sidi) "New algorithms for polynomial and trigonometric interpolation on parallel computers."

1992 International Congress on Extrapolation and Rational Approximation, Tenerife, Spain. (Invited speaker.)

Paper presented (A. Sidi) "Rational approximations from power series of vector-valued meromorphic functions and their applications to the matrix eigenvalue problem."

1992 Numerical Integration, Oberwolfach, Germany. (Participation by personal invitation.)

Paper presented (A. Sidi) "A new variable transformation for numerical integration."

1993 The 6th Copper Mountain Conference on Multigrid Methods, Denver, Colorado.

Paper presented (Y. Shapira, M. Israeli, and A. Sidi) "An automatic multigrid method for the solution of sparse linear systems."

1993 A Symposium on Linear Algebra and Optimization, Technion - Israel Institute of Technology, Haifa, Israel. (Participation by personal invitation.)

Paper presented (A. Sidi) "Iterative techniques and extrapolation methods for the Drazin inverse solution of consistent and inconsistent singular linear systems."

1993 The Eighth Haifa Matrix Theory Conference, Technion - Israel Institute of Technology, Haifa, Israel.

Paper presented (A. Sidi) "Application of vector-valued rational approximations to the matrix eigenvalue problem and connections with Krylov subspace methods."

1993 The 18th Dutch Conference on Numerical Analysis, Zeist, Holland. (Invited speaker.)

Papers presented (i) (A. Sidi) "A survey of recent developments in vector extrapolation methods." (ii) (A. Sidi and Y. Shapira) "Application of vector extrapolation methods to large sparse linear systems; new error bounds in the presence of initial iterations."

1993 Cornelius Lanczos International Centenary Conference, Raleigh, North Carolina. (Invited speaker to the minisymposium *Eigenvalue Computations: Theory and Algorithms* and to the minisymposium *Iterative Methods for Linear Systems.*)

Papers presented (i) (A. Sidi) "Application of vector-valued rational approximations to the matrix eigenvalue problem and connections with Krylov subspace methods." (ii) (A. Sidi and Y. Shapira) "Upper bounds for convergence rates of vector extrapolation methods on linear systems with initial iterations."

1994 Constructive Approximation and Applications (as part of Special Semester in Approximation Theory), Tel-Aviv, Israel. (Participation by personal invitation.)

Paper presented (A. Sidi) "Extension and completion of Wynn's theory on convergence of columns of the epsilon table with applications in numerical quadrature."

1994 Workshop on New Developments in Series Expansions - 1994, Institute of Theoretical Physics, Technion - Israel Institute of Technology, Haifa, Israel. (Participation by personal invitation.)

Paper presented (A. Sidi) "Acceleration of convergence of infinite series by the d-transformation."

1994 Theory Institute, Argonne National Laboratory, Argonne, Illinois. (Invited speaker.)

Paper presented (A. Sidi) "New quadrature methods for singular and weakly singular periodic integral equations."

1995 AMS–SIAM Summer Seminar on Mathematics of Numerical Analysis: Real Number Algorithms, Park City, Utah. (Invited speaker to the Numerical Linear Algebra Workshop and the Approximation Theory Workshop.)

Papers presented (i) (A. Sidi) "Convergence theory for simultaneous iteration and Krylov subspace methods for eigenvalues with special properties."
(ii) (A. Sidi) "New rational approximation procedures for vector-valued meromorphic functions and connections with Krylov subspace methods for the matrix eigenvalue problems."

1995 Rocky Mountain Conference on Numerical Analysis and Applications, Salt Lake City, Utah.

Paper presented (A. Sidi) "Extension and completion of Wynn's theory on convergence of columns of the epsilon table."

1995 Fifth Conference of the International Linear Algebra Society, Atlanta, Georgia.

Paper presented (J.-J. Climent, M. Neumann, and A. Sidi) "A Chebyshev-like semi-iteration for singular linear systems in the ganeral case."

1997 Guangzhou International Conference on Computational Mathematics, Guangzhou, People's Republic of China. (Invited speaker.)

Paper presented (A. Sidi) "Krylov subspace methods for eigenvalues with special properties."

1998 The Tenth Haifa Matrix Theory Conference, Technion - Israel Institute of Technology, Haifa, Israel.

Paper presented (A. Sidi) "Use of Krylov subspace methods for approximating eigenvalues with special properties."

1998 ICOSAHOM'98: International Conference on Spectral and High Order Methods, Herzliya, Israel.

Paper presented (D. Givoli, I. Patlashenko, and A. Sidi) "A hiearchy of non-reflecting boundary conditions and finite elements."

1999 The Eleventh Haifa Matrix Theory Conference, Technion - Israel Institute of Technology, Haifa, Israel.

Paper presented (A. Sidi and V. Kluzner) "A Bi-CG type iterative method for Drazin-inverse solution of singular inconsistent nonsymmetric linear systems with arbitrary index."

1999 MAFELAP'99 Mathematics of Finite Elements and Applications, United Kingdom.

Paper presented (D. Givoli, A. Sidi, and I. Patlashenko) "A hiearchy of optimal non-reflecting finite elements."

2000 2nd Joint Cyprus–Israel Mathematics Workshop on Approximation Theory, Computational Mathematics, and Numerical PDEs, Tel-Aviv University, Tel-Aviv, Israel.

Paper presented (A. Sidi) "A unified approach to Krylov subspace methods for the Drazin-inverse solution of singular nonsymmetric linear systems."

2001 Computational Methods and Function Theory 2001, the University of Aveiro, Aveiro, Portugal.

Paper presented (A. Sidi and Y. Kanevsky) "Orthogonal polynomials and semi-iterative methods for the Drazin-inverse solution of singular inconsistent nonsymmetric linear systems of arbitrary index and complex spectra."

2001 WSEAS Annual Multiconference on Applied and Theoretical Mathematics, Cairns, Australia.

Paper presented (F. Su, T. Hasegawa, and A. Sidi) "An automatic integration of infinite range integrals involving Bessel functions."

2002 International Conference on Computational and Applied Mathematics 2002, Leuven, Belgium.

Paper presented (A. Sidi and Y. Kanevsky) "Orthogonal polynomials and semi-iterative methods for the Drazin-inverse solution of singular inconsistent nonsymmetric linear systems of arbitrary index and complex spectra."

2002 11th International Colloquium on Numerical Analysis and Computer Science with Applications, Plovdiv, Bulgaria. (Invited speaker.)

Papers presented (i) (A. Sidi) "The Richardson extrapolation and its generalizations: a survey." (ii) (A. Sidi and Y. Kanevsky) "Orthogonal polynomials and semi-iterative methods for the Drazin-inverse solution of singular inconsistent nonsymmetric linear systems of arbitrary index and complex spectra."

2003 ICIAM 2003: 5th International Congress on Industrial and Applied Mathematics, Sydney, Australia. (Invited speaker to the minisymposium *Krylov subspace methods on singular and nearly singular equations.*)

Paper presented (A. Sidi) "Semi-iterative methods and Krylov subspace methods for Drazin-inverse solution of singular linear systems."

2003 4th WSEAS International Conference on Applied Mathematics, Malta.

Paper presented (A. Sidi) "A zero-cost preconditioning for a class of indefinite linear systems."

2004 International Conference on Computational Science, ICCS 2004, Kraków, Poland. (Invited speaker to the workshop *New numerical methods for ODEs.*)

Paper presented (A. Sidi) "Application of extrapolation methods to numerical solution of Fredholm integral equations related to boundary value problems."

2004 International Conference on Generalized Inverse and Its Applications, Harbin, China. (Invited key-note speaker.)

Paper presented (A. Sidi) "Semi-iterative methods and Krylov subspace methods for Drazin-inverse solution of singular linear systems."

2005 The 2005 Haifa Matrix Theory Conference, Haifa, Israel.

Paper presented (A. Sidi) "Approximation of largest eigenpairs of matrices and applications to PageRank computation."

2005 ICCSE 2005, International Conference on Computational Science and Engineering, Istanbul, Turkey. (Invited speaker.)

Paper presented (A. Sidi) "An overview of vector extrapolation methods with applications to solutions of large systems of equations and to PageRank computations."

2005 FoCM'05, Foundations of Computational Mathematics, Santander, Spain. (Participation by personal invitation.)

Paper presented (A. Sidi) "Approximation of largest eigenpairs of matrices and applications to PageRank computation."

2006 Third International Conference on Complex Analysis and Dynamical Systems, Nahariya, Israel.

Paper presented (A. Sidi) "A novel approach to vector-valued rational interpolation."

2007 The 2007 Haifa Matrix Conference, Haifa, Israel.

Paper presented (A. Sidi) "Linear algebra techniques for analysis of rational interpolants to vector-valued meromorphic functions,"

2007 Optimal Algorithms and Computational Complexity for Numerical Problems (A conference in honor of Frank Stenger's research career), Salt Lake City, Utah. (Participation by personal invitation.)

Paper presented (A. Sidi) "Recent developments in variable transformations for numerical integration."

2007 ICIAM07 – 6th International Congress on Industrial and Applied Mathematics, Zurich, Switzerland.

Paper presented (A. Sidi) "Variable transformations in numerical integration."

2007 Modern Approaches in Asymptotics of Polynomials, Banff, Alberta, Canada. (Participation by personal invitation.)

Paper presented (A. Sidi) "Sequence transformations, numerical quadrature, and biorthogonal polynomials."

2008 Gene Golub Memorial Conference (Gene Golub Around the World Commemoration), Tel Aviv University, Tel Aviv.

Paper presented (A. Sidi) "PageRank computation by vector extrapolation methods."

2008 Moshe Israeli Memorial Conference, Technion, Haifa.

Paper presented (A. Sidi) "Romberg-type quadrature methods for periodic singular and weakly singular integral equations."

2009 The 2009 Haifa Matrix Conference , Technion, Haifa.

Paper presented (A. Sidi) "Asymptotics of some determinants that arise from generalized Richardson extrapolation."

2009 Complex Analysis & Dynamical Systems IV, Nahariya, Israel.

Paper presented (A. Sidi) "Vector-valued rational interpolation in the complex plane."

2009 Computational Methods and Function Theory, Ankara, Turkey.

Paper presented (A. Sidi) "Convergence study of a least-squares vector-valued rational interpolation procedure."

2009 The 11th Israeli Mini-Workshop in Applied and Computational Mathematics, Technion, Haifa.

Paper presented (A. Sidi) "An overview of vector extrapolation methods with applications."

2009 Approximation and Extrapolation of Convergent and Divergent Sequences and Series, CIRM Luminy, France. (Participation by personal invitation.)

Paper presented (A. Sidi) "Survey of numerical stability issues in convergence acceleration."

2010 Jaen Conference on Approximation Theory, Úbeda, Spain. (Participation by personal invitation.)

Paper presented (A. Sidi) "Algebraic and analytical study of a class of vector-valued rational interpolation procedures."

2010 New perspectives in univariate and multivariate orthogonal polynomials, Banff, Alberta, Canada. (Participation by personal invitation.)

Paper presented (A. Sidi) "Some recent asymptotic results related to Legendre polynomials."

2011 International Conference on Special Functions in the 21st Century, Washington, D.C. (Participation by personal invitation.)

Paper presented (A. Sidi) "Recent asymptotic results for Euler-Maclaurin expansions, Gauss-Legendre quadrature, and Legendre polynomial expansions."

2011 International Symposium in Approximation Theory, Nashville, Tennessee. (Invited speaker to the minisymposium *Orthogonal Polynomials and their Applications to Approximation Theory.*)

Paper presented (A. Sidi) "Recent asymptotic expansions related to Legendre polynomials."

2011 Israel Mathematical Union Meeting, Bar-Ilan University, Israel. (Invited speaker to the minisymposium *Applied Mathematics.*)

Paper presented (A. Sidi) "Recent developments in variable transformations for numerical integration."

2012 Moshe Israeli Memorial Conference, Technion, Haifa.

Paper presented (A. Sidi) "Recent developments in asymptotic expansions and variable transformations for numerical quadrature."

2012 Fourteenth Mini-Workshop on Applied and Computational Mathematics, Tel Aviv University, Israel.

Paper presented (A. Sidi) "Compact numerical quadrature formulas for hypersingular integrals and integral equations."

2012 Molecular Electronic Structure at Troy, September 9–13, 2012, Çanakkale, Turkey. (Invited speaker. Also member of the international organizing committee, and organizer and chairman of the special session on extrapolation methods.)

Paper presented (A. Sidi) "A user-friendly extrapolation method for computing infinite-range integrals of products of oscillatory functions."

2014 Second Joint International Meeting of the Israel Mathematical Union and the American Mathematical Society, June 16-19, 2014, Tel Aviv, Israel.

Paper presented (A. Sidi) "Recent asymptotic expansions for the trapezoidal rule, Gauss–Legendre quadrature, and Legendre polynomial expansions."

2015 Numerical Methods & Applied Geometry, May 7, 2015, Weizmann Institute of Science, Rehovot, Israel. (Invited speaker.)

Paper presented (A. Sidi) "Computation of infinite-range integrals of products of oscillatory functions by extrapolation."

2015 OPSFA 13, The 13th SIAM International Symposium on Orthogonal Polynomials, Special Functions and Applications, June 1-5, 2015, National Institute of Standards and Technology, Gaithersburg, MD. (Invited speaker to the minisymposium *Asymptotics of Orthogonal Polynomials.*)

Paper presented (A. Sidi) "Recent asymptotic expansions for Legendre polynomial series and Gauss–Legendre quadrature."

2015 Dagstuhl Seminar on Sparse Modelling and Multi-Exponential Analysis, June 15–19, 2015, Schloss Dagstuhl, Leibnitz-Centrum für Informatik, Wadern, Germany. (Member of the organizing committee.)

Paper presented (A. Sidi) "New approaches to vector-valued rational interpolation."

2016 MESBA 2016, Molecular Electronic Structure Buenos Aires, September 19–23, Buenos Aires, Argentina. (Invited speaker. Member of the international organizing committee.)

Paper presented (A. Sidi) "Recent developments in asymptotic expansions from numerical analysis and approximation theory"

2016 BIRS-CMO Seminar on Sparse Interpolation, Rational Approximation, and Exponential Analysis, October 30–November 4, 2016, Casa Matematica Oaxaca, Oaxaca, Mexico. (Member of the organizing committee.)

Paper presented (A. Sidi) "Vector versions of Prony's algorithm."

2018 Curves and Surfaces 2018, 8th International Conference on Curves and Surfaces, June 28–July 4, 2018, Palais des Congrès, Arcachon, France.

Paper presented (A. Sidi) "Vector versions of Prony's algorithm."

2019 ILAS 2019: Linear Algebra Without Borders, July 8–12, 2019, Fundação Getulio Vargas (FGV), Rio de Janeiro, Brazil. (Invited speaker to the minisymposium *Numerical Approaches for Solving Large-Scale Sparse Systems.*)

Paper presented (A. Sidi) "Recent developments in vector extrapolation methods."

2020 WMES 2020, Warsaw Molecular Electronic Structure virtual conference, September 1–4, 2020, Warsaw, Poland. (Invited speaker. Member of the international organizing committee.)

Paper presented (A. Sidi) "Vector extrapolation/convergence acceleration methods for solution of large systems of equations"

2021 Numerical Methods and Scientific Computing, November 8–12, 2021, Luminy, France. (Participation by personal invitation.)

Paper presented (A. Sidi) "New numerical quadrature formulas of spectral accuracy for Hadamard finite parts of periodic divergent integrals"

2022 Computational Methods and Function Theory virtual conference, January 10–14, 2022, Universidad Técnica Federico Santa María, Valparaíso, Chile.

Paper presented (A. Sidi) "Asymptotic expansions and spectrally convergent numerical quadrature methods for Hadamard finite parts of periodic divergent integrals"