

Alfio Quarteroni

LIST of PUBLICATIONS

B. Books (author)

- B1 - C. Canuto, M. Y. Hussaini, A. Quarteroni and T. A. Zang, **Spectral Methods in Fluid Dynamics**, Springer-Verlag, New York, 1988, (557 p.)
- B2 - A. Quarteroni and A. Valli, **Numerical Approximation of Partial Differential Equations**, Springer-Verlag, Heidelberg, 1994, SCM Series n. 23. (543 p.)
- B3 - A. Quarteroni, **Elementi di Calcolo Numerico**, Esculapio, Bologna, 1994 (in Italian) (181 p.)
- B4 - A. Quarteroni, R. Sacco and F. Saleri, **Matematica Numerica**, Springer-Verlag Italia, Milan, 1998; second edition, 2003 (in Italian) (440 p.); third edition, 2008 (509 p.); fourth edition, 2014 (529 p.) (authors: A. Quarteroni, R. Sacco, F. Saleri and P. Gervasio).
- B5 - A. Quarteroni and A. Valli, **Domain Decomposition Methods for Partial Differential Equations**, Oxford University Press, Oxford, 1999, (360 p.)
- B6 - A. Quarteroni, R. Sacco and F. Saleri, **Numerical Mathematics**, Springer-Verlag New-York, 2000, TAM Series n. 37, (655 p.); second edition, 2007 (655 p.)
- B6a - A. Quarteroni, R. Sacco and F. Saleri, **Numerische Mathematik I, II** Springer-Verlag, Berlin and Heidelberg, 2002 (in German) (367 p. + 328 p.) (translation by L. Tobiska)
- B6b - A. Quarteroni, R. Sacco and F. Saleri, **Méthodes Numériques pour le Calcul Scientifique**, Springer-France, Paris, 2000 (in French) (444 p.) (Translation by J.F. Gerbeau)

- B7 - A. Quarteroni, **Modellistica Numerica per Problemi Differenziali**, Springer-Verlag Italia, Milan, 2000 (in Italian) (290 p.); second edition, 2003 (330 p.); third edition, 2006 (451 p.); fourth edition, 2008 (561 p.); fifth edition, 2012 (630 p.); sixth edition, 2016 (xix + 651 p.)
- B8 - A. Quarteroni and F. Saleri, **Introduzione al Calcolo Scientifico. Esercizi e Problemi Risolti con MATLAB e Octave**, Springer-Verlag Italia, Milan (in Italian). First edition, 2001(219 p.), second edition, 2004; third edition, 2006 (306p.), fourth edition, 2008 (358p.).
- B9 - A. Quarteroni, F. Saleri and P. Gervasio, **Calcolo Scientifico. Esercizi e Problemi Risolti con MATLAB e Octave**, Springer-Verlag Italia, Milan (in Italian). 5th edition, 2012 (450 p.)
- B10 - A. Quarteroni and F. Saleri, **Scientific Computing with MATLAB and Octave**, Springer-Verlag Heidelberg, 2003 (257 p.); second edition, 2006 (318 p.)
- B10a -A. Quarteroni and F. Saleri, **Calcul scientifique. Cours exercices corrigés et illustrations en Matlab et Octave**, Springer, 2006. (in French) (319p.) (Translation by J.F. Gerbeau)
- B10b -A. Quarteroni and F. Saleri, **Cálculo Científico com MATLAB e Octave**, Springer, 2007. (in Portuguese) (320 p.) (translation by A. Sequeira)
- B10c - A. Quarteroni and F. Saleri, **Cálculo Científico con MATLAB y Octave**, Springer, 2006. (in Spanish) (329 p.) (translation by R. Bermudez)
- B10d - A. Quarteroni and F. Saleri, **Wissenschaftliches Rechnen mit MATLAB**, Springer, 2005 (in German) (269 p.) (Translation by K.Sapelza)
- B11 - C. Canuto, M. Y. Hussaini, A. Quarteroni and T. A. Zang, **Spectral Methods: Fundamentals in Single Domains**, Springer, 2006. (563 p.)
- B12 - C. Canuto, M. Y. Hussaini, A. Quarteroni and T. A. Zang, **Spectral Methods: Evolution to Complex Geometries and Applications to Fluid Dynamics**, Springer, 2007. (625 p.)
- B13 - A. Quarteroni, **Numerical Models of Differential Problems**, Springer Series MS&A, Vol 2, 2009 (602 p.); 2nd edition, Springer Series MS&A, Vol 8, 2014 (656p.); 3rd edition, Springer Series MS&A, Vol 16, 2017 (xvii+681p.);
- B14 -A. Quarteroni, F. Saleri and P. Gervasio, **Scientific Computing with MATLAB and Octave**, Springer-Verlag Heidelberg, 2010, third edition (360 p.); 2014 fourth edition (442 p.)
- B14a – A. Quarteroni, F. Saleri and P. Gervasio, **Calcul scientifique. Cours exercices corrigés et illustrations en Matlab et Octave**, Springer-Milan, 2010 (in French) (365p.)
- B14b - A. Quarteroni, F. Saleri and P. Gervasio, **Scientific Computing with MATLAB and Octave**, Maruzen Publishing Co. (Tokyo) 2014 fourth edition (502 p.) – in Japanese- (Translation by Takashi Kako)
- B15 - C.D’Angelo and A. Quarteroni, **Matematica Numerica. Esercizi, Laboratori e Progetti**, Springer Series Unitext, Milan, 2009 (in Italian) (349 p.)
- B15a - A. Quarteroni, **Matematica Numerica. Esercizi, Laboratori e Progetti**, Springer Series Unitext, Vol 75, Milan, 2nd edition, 2013 (in Italian) (406 p.)
- B16 – A. Quarteroni, A. Manzoni and F. Negri, **Reduced Basis Method for Partial Differential Equations. An Introduction**. Springer Series Unitext, Vol.92, Milan, 2015 (296p.)
- B17 – A. Quarteroni, L. Dede’, A. Manzoni and C. Vergara, **Mathematical Modelling of the Human Cardiovascular System**. Data, Numerical Approximation, Clinical Applications. Cambridge University Press, 2019

B18 – A. Quarteroni and P. Gervasio, **I delfini delle Eolie, i battiti del cuore, i motori di ricerca** – Modelli matematici per comprendere, simulare, esplorare, Zanichelli, 2019 (235p., in Italian)

B19 – A. Quarteroni and P. Gervasio, **A Primer on Mathematical Modelling**, Springer Series Unitext Vol. 121, 2020

B20 – A. Quarteroni, **Le equazioni del cuore, della pioggia e delle vele**, Zanichelli, Chiavi di Lettura, 2020 (in Italian)

B21 – A. Manzoni, A. Quarteroni, and S. Salsa, **Optimal Control Problems for Partial Differential Equations: Analysis, Approximation, Applications**. Springer AMS, New York, in press, 2021

B22 – A. Quarteroni, **Algoritmi per un Nuovo Mondo**, Le Grandi Voci, Dedalo, 2021 (in Italian)

E. Books (editor)

E1 - C. Canuto and A. Quarteroni, Eds., **Spectral and High Order Methods for Partial Differential Equations**, Elsevier, North Holland, Amsterdam, 1990.

E2 - A. Quarteroni, J. Periaux, Y. A. Kuznetsov and O. B. Widlund, Eds., **Domain Decomposition Methods in Science and Engineering**, AMS, Providence, RI, 1994. (485 p.)

E3 - A. Quarteroni, Ed., **Advanced Numerical Methods for Hyperbolic Equations**, LNM, Springer-Verlag, Heidelberg, 1998. (450 p.)

E4 - A. Quarteroni, L. Formaggia and A. Veneziani, Eds., **Complex Systems in Biomedicine**, Springer Italia, 2006 (292 p.)

E5 - L. Formaggia, A. Quarteroni and A. Veneziani, Eds., **Cardiovascular Mathematics. Modeling and Simulation of the Circulatory System**, Springer Series MS&A, Vol 1, 2009

E6 - M. Emmer and A. Quarteroni, Eds., **MATHKNOW**, Springer Series MS&A, Vol 3, 2009 (264 p.)

E7 - D. Ambrosi, A. Quarteroni and G. Rozza, Eds., **Modelling Physiological Flows**, Springer Series MS&A, Vol 5, 2011 (240p.)

E8 - A. Quarteroni and G. Rozza, Eds., **Reduced Order Methods for Modeling and Computational Reduction**, Springer Series MS&A, Vol 9, 2014 (334p.)

E9 - A. Quarteroni, Ed., **Modeling the Heart and the Circulatory System**, Springer Series MS&A, Vol 14, 2015 (236p.)

E10 - P. Benner, S. Grivet-Talocia, A. Quarteroni, G. Rozza, W. Schilders, L.M. Silveira, Eds., **Model Order Reduction**, Vol I: System and Data-Driven Methods and Algorithms, De Gruyter, 2020 (in press)

E11 - P. Benner, S. Grivet-Talocia, A. Quarteroni, G. Rozza, W. Schilders, L.M. Silveira, Eds., **Model Order Reduction**, Vol II: Snapshot-Based Methods and Algorithms, De Gruyter, 2020

E12 - P. Benner, S. Grivet-Talocia, A. Quarteroni, G. Rozza, W. Schilders, L.M. Silveira, Eds., **Model Order Reduction**, Vol III: Applications, De Gruyter, 2020

J. Refereed Journals Publications

(black=printed, green=in press, blue=submitted)

- J1 - A. Quarteroni, "Primal hybrid finite element methods for fourth order elliptic equations", **Calcolo XVI** (1979), pp.21-59
- J2 - A. Quarteroni, "Error estimates for the assumed stresses hybrid methods in the approximation of fourth order elliptic equations", **R.A.I.R.O. An. Num. 13** (1979), pp.355-367
- J3 - F. Brezzi, L. D. Marini, A. Quarteroni and P. A. Raviart, "On an equilibrium finite element method for plate bending problems", **Calcolo XVII** (1980), pp.271-291
- J4 - A. Quarteroni, "Hybrid finite element methods for the Von Karman equations" **Calcolo XVI** (1979), pp.271-288
- J5 - A. Quarteroni and A. Visintin, "On the numerical solution of a nonlinear variational equation related to a filtration problem", **Boll. U.M.I. (5) 17-B** (1980), pp.204-231
- J6 - A. Quarteroni, "On mixed methods for fourth order problems", **Comp. Meths. Appl. Mech. Engrg. 24** (1980), pp.13-34
- J7 - A. Quarteroni, "Mixed approximation of evolution problems", **Comp. Meths. Appl. Mech. Engrg. 24** (1980), pp.137-163
- J8 - C. Canuto and A. Quarteroni, "Propriétés d'approximations dans les espaces de Sobolev de systemes de polynomes orthogonaux", **C.R.Acad.Sci.Paris 290-A** (1980), pp.925-928
- J9 - C. Canuto and A. Quarteroni, "Approximation Results for Orthogonal Polynomials in Sobolev Spaces", **Math. Comput. 38** (1982), pp.67-86
- J10 - A. Quarteroni, "Some results of Bernstein and Jackson type for polynomial approximation in LP spaces", **Japan Journal of Applied Math. 1** (1984), pp.173-181
- J11 - C. Canuto and A. Quarteroni, "Spectral and Pseudospectral Methods for Parabolic Problems with Non Periodic Boundary Conditions", **Calcolo 23** (1981), pp.197-217
- J12 - C. Canuto and A. Quarteroni, "Error Estimates for Spectral and Pseudospectral Approximations of Hyperbolic Equations", **SIAM J. Numer. Anal. 19** (1982), pp.629-642
- J13 - C. Canuto and A. Quarteroni, "Spectral Methods for Hyperbolic Equations", **Rend. Sem. Mat. Univers. Politecn. Torino 39** (1981), pp.21-31
- J14 - Y. Maday and A. Quarteroni, "Approximation de l'equation de Burgers stationnaire par des methodes spectrales", **C.R. Acad. Sci. Paris 293-I** (1981), pp.143-146
- J15 - Y. Maday and A. Quarteroni, "Approximation of Burgers' equation by pseudo-spectral methods", **R.A.I.R.O. An. Num. 16** (1982), pp.375-404
- J16 - Y. Maday and A. Quarteroni, "Legendre and Chebyshev spectral approximations of Burgers' equation", **Numer. Math. 37** (1981), pp.321-332
- J17 - Y. Maday and A. Quarteroni, "Spectral and pseudo-spectral approximations of Navier-Stokes equations", **SIAM J.Numer. Anal. 19** (1982), pp.761-780
- J18 - C. Canuto, Y. Maday and A. Quarteroni, "Analysis of the Combined Finite Element and Fourier Interpolation", **Numer. Math. 39** (1982), pp.205-220

- J19 - C. Canuto, H. Fujii and A. Quarteroni, "Approximation of Symmetry Breaking Bifurcations for the Rayleigh Convection Problem", **SIAM J. Numer. Anal.** **20** pp.873-884 (1983), pp.873-884
- J20 - C. Canuto, Y. Maday and A. Quarteroni, "Combined Finite Element and Spectral Approximation of the Navier-Stokes Equations", **Numer. Math.** **44** (1984), pp.201-217
- J21 - C. Canuto and A. Quarteroni, "Preconditioned Minimal Residual Methods for Chebyshev Spectral Calculations", **J. Comput. Phys.** **60** (1985), pp.315-337
- J22 - V. Battarra, C. Canuto and A. Quarteroni, "A Chebyshev Spectral Method for Gas Transients in Pipelines", **Comp. Meth. Appl. Mech. Engrg.** **48** (1985), pp.329-352
- J23 - A. Quarteroni, "Blending Fourier and Chebyshev Interpolation", **J. Approx. Theory** **51** (1987), pp.115-126
- J24 - N. Bressan and A. Quarteroni, "Analysis of Chebyshev Collocation Methods for Parabolic Equations", **SIAM J. Numer. Anal.** **23** (1986), pp.1138-1154
- J25 - N. Bressan and A. Quarteroni, "An Implicit/Explicit Spectral Method for Burgers' Equation", **Calcolo XXIII** (1987), pp.265-284
- J26 - C. Canuto and A. Quarteroni, "On the Boundary Treatment in Spectral Methods for Hyperbolic Systems", **J. Comput. Phys.** **71** (1987), pp.100-110
- J27 - A. Quarteroni, "Fourier spectral methods for pseudoparabolic equations", **SIAM J. Numer. Anal.**, **24** (1987), pp.323-335
- J28 - D. Funaro, A. Quarteroni and P. Zanolli, "An iterative procedure with interface relaxation for domain decomposition methods", **SIAM J. Numer. Anal.** **25** (6), (1988), pp.1213-1236
- J29 - Y. Maday and A. Quarteroni, "Error Analysis for Spectral Approximations to the Korteweg de Vries Equation", **MMAN** **22** (1988), pp.539-569.
- J30 - A. Quarteroni, "Domain Decomposition Techniques Using Spectral Methods", **Calcolo XXIV** (1987), pp.141-177
- J31 - F. Pasquarelli, A. Quarteroni and G. Sacchi-Landriani, "Spectral Approximations of the Stokes Problem by Divergence Free Functions", **J. Scientific Comput.** **2**, (1987), pp.195-226
- J32 - L. D. Marini and A. Quarteroni, "A Relaxation Procedure for Domain Decomposition Methods Using Finite Elements", **Numer. Math.** **55**, (1989), pp.575-598
- J33 - A. Quarteroni and G. Sacchi-Landriani, "Domain Decomposition Preconditioners for the Spectral Collocation Method", **J. Scientific Comput.** **3** (1), (1988), pp.45-75
- J34 - A. Quarteroni and G. Sacchi-Landriani, "Parallel Algorithms for the Capacitance Matrix Method in Domain Decompositions", **Calcolo** **25** (1-2) (1988), pp.75-102
- J35 - F. Gastaldi and A. Quarteroni, "On the Coupling of Hyperbolic and Parabolic Systems: Analytical and Numerical Approach", **Applied Numerical Mathematics** **6** (1989), pp.3-31
- J36 - A. Quarteroni, "Domain Decomposition Methods for Systems of Conservation Laws: Spectral Collocation Approximations", **SIAM J. Sci. Stat. Comput.**, **11** (6), (1990), pp.1029-1052
- J37 - A. Quarteroni, G. Sacchi Landriani and A. Valli, "Coupling of viscous and inviscid Stokes equations via a domain decomposition method for finite elements", **Numer. Math.**, **59** (1991), pp. 831-859

- J38 - A. Quarteroni, " Domain Decomposition Method and Parallel Processing for the Numerical Solution of Partial Differential Equations", **Surveys on Mathematics for Industry** **1**(1991) , pp.75-118
- J39 - A. Quarteroni and E. Zampieri, "Finite Element Preconditioning for Legendre Spectral Collocation Approximations to Elliptic Systems and Equations", **S.I.A.M. J. Numer. Anal.** **29**, (1992), pp. 917-936
- J40 - L. Avaldi, A. Quarteroni and F. Saleri, "Finite Element Simulation of Electron Optical Systems", **Math. Models and Meth. in Applied Sciences**, **2**, (1992), pp. 339-356
- J41 - A. Cividini, A. Quarteroni and E. Zampieri, "Numerical Solution of Linear Elastic Problem by Spectral Collocation Methods", **Comp. Meth. Appl. Mech. Engrg.** **104**, (1993). pp. 49-76
- J42 - A. Frati, F. Pasquarelli and A. Quarteroni, "Spectral Approximation to Advection-Diffusion Problems by the Fictitious Interface Method", **J. Comput. Physics** **107**, (1993), pp. 201-212
- J43 - V. I. Agoshkov, D. Ambrosi, V. Pennati, A. Quarteroni, F. Saleri, Mathematical and Numerical Modelling of Shallow Water Flow, **Computational Mechanics**, **11**, (1993), pp. 280-299
- J44 - A. Quarteroni, Metodi Numerici in Fluidodinamica, **Boll. U.M.I. (7) 6-A**, (1992), pp. 157-180
- J45 - F. Pasquarelli, A. Quarteroni, Effective Spectral Approximation to Convection- Diffusion Equations, **Comput. Methods Appl. Mech. Engrg.**,116, 1994, pp.39-51
- J46 - S. Micheletti, A. Quarteroni and R. Sacco, Current-Voltage Characteristics Simulation at Semiconductor Devices Using Domain Decomposition, **J. Comput. Phys.**, 119, (1995), pp. 46-61
- J47 - V. I. Agoshkov, A. Quarteroni, F. Saleri, Recent Developments in the Numerical Simulation of Shallow Water Equations. I-Boundary Conditions, **Applied Numerical Mathematics**, 5, (1994), pp. 175-200
- J48 - V. I. Agoshkov, E. Ovchinnikov, A. Quarteroni, F. Saleri, Recent Developments in the Numerical Simulation of Shallow Water Equations. Time-discretization Methods, **Mathematical Models and Methods in Applied Sciences**, vol.4, No.4, (1994), pp. 533-556.
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- J50 - P. Gervasio, E. Ovchinnikov and A. Quarteroni, The Spectral Projection Decomposition Method for Elliptic Equations in 2D, **SIAM J. Numer. Anal.** 34 (1999), pp.1616-1639
- J51 - E. Faccioli, A. Quarteroni and A. Tagliani, Spectral Domain Decomposition Methods for the Solution of Elastic Wave Equations, **Geophysics** , 61 (4) (1996), pp. 1160-1174
- J52 - F. Maggio and A. Quarteroni, Acoustic wave simulation by spectral methods, **East-West Journal of Numerical Mathematics**, 2 (1994), pp.129-150
- J53 - A. Quarteroni and L. Stolcis, Homogeneous and Heterogeneous Domain Decomposition Methods for Compressible Fluid Flows at High Reynolds Numbers, **CFD Review**, II (1998), pp.1064-1078
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- J57 - F. Maggio and A. Quarteroni, Domain decomposed spectral methods for wave propagation, **ZAMM**, 76 (supplement 1) (1996), pp. 239-242
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- J59 - A. Pinelli, A. Vacca and A. Quarteroni, A Spectral Multi-Domain Method for the Numerical Simulation of Turbulent Flows, **J. Comput. Phys.** 136 (1997) ,pp. 546-558
- J60 - A. Quarteroni, D. Ambrosi, G. Fotia, G. Manzini, M. Mulas, L. Stolcis, Computational Fluid Dynamics at CRS4, **IEEE: Computational Science and Engineering**, 3 (3) (1996), pp. 4-8
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- J62 - A. Quarteroni, A. Veneziani, Vascular Fluid Dynamics: Models and Methods, **Istituto Lombardo Accademia di Scienze Lettere**, Incontro di Studio n. 16 (1998), pp. 219-271
- J63 - D. J. P. Lahaye, F. Maggio, A. Quarteroni, Hybrid Finite Element Spectral Element Approximation of Waves Propagation Problems, **East-West Journal of Numerical Mathematics**, 5 (1997), pp.265-290
- J64 - A. Quarteroni, A. Tagliani, E. Zampieri, Generalized Galerkin Approximations of Elastic Waves with Absorbing Boundary Conditions, **Comput. Methods Appl. Mech. Engrg.**, 163 (1998), pp.323-341
- J65 - A. Quarteroni, M. Tuveri, A. Veneziani, Computational Vascular Fluid Dynamics : Problems, Models and Methods, **Computing and Visualization in Science**, 2 (4), (2000), pp. 163-197
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- J72 - L. Formaggia, J. F. Gerbeau, F. Nobile and A. Quarteroni, On the Coupling of 3D and 1D Navier-Stokes equations for Flow Problems in Compliant Vessels, **Comp. Methods Appl. Mech. Engrng.** 191(6-7) (2001), pp.561-582

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- J74 - A. Quarteroni, A. Veneziani and P. Zunino, Mathematical and numerical modelling of solute dynamics in blood flow and arterial walls, **SIAM J. Numer. Anal.** Vol 39, No 5, (2001), pp. 1488-1511
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