Curriculum vitae

Name: Elena Celledoni

Current post: Professor of Mathematics at NTNU
Affiliation: Department of Mathematical Sciences NTNU, Trondheim, Norway

Date of birth: 9th September, 1967

Languages: Italian, English, Norwegian

Academic education:
Laurea in Mathematics (University of Trieste), 4 years.
Ph.D. in Computational Mathematics (University of Padova)

Career:
2004-2009 Associate Professor at NTNU
2001-2004 Research scientist at SINTEF (Norwegian Foundation for Science and Technology)
2002-2003 Research fellow at the Center for Advanced Study, Oslo,
(fellowship from the University of Bergen).
1999-2001 Post-doc in Numerical Analysis, NTNU, Trondheim
1998-99: Post-doc at the Mathematical Science Research Institute, Berkeley (CA)
1997-98: Post-doc in Numerical Analysis, DAMTP, Cambridge, UK

Membership: Member of *Det Norske Kongelige Vitenskap Selskab*, Royal Norwegian Society of Sciences and Letters (Elected).
Distinctions and awards:
Severo Ochoa Distinguished Professor, ICMAT, Madrid, Spain 2024-2028.
Paper awarded the John Ockendon Prize 2022 by the European Journal of Mathematics, 2022.

Invited plenary talks and lectures.

One World Seminar Mathematics of Machine Learning, November 2024. **SciCADE 2024** National University of Singapore, July 2024.
Workshop Exploiting Algebraic and Geometric Structure in Time-Integration Methods Scuola Normale Superiore di Pisa, Italy, April, 2024.
Workshop on Structured Machine Learning and Time–Stepping for Dynamical Systems BIRS, Banff, Canada, February, 2024.
Colloquium, Department of Mathematical Sciences, Lund University, Lund, SE, January, 2024.
Workshop on Structure-preserving Algorithms with Applications Chinese Academy of Sciences, Beijing, September, 2023.
Conference on Deep Learning for Computational Physics , University College London, 4-6 July, 2023.
Geometry Science of Information, Toulouse, France, August 27 to 29, 2019.
INDAM day Bari, 2019, Istituto di Alta Mathematica, Italy, June 2019.
Nonlinear evolution equations Oberwolfach Workshop, February 2019. (Organizers: Marlis Hochbruck, Alexander Ostermann)
5 Iberoamerican meeting on Geometry, Mechanics and Control, La Laguna, Tenerife, January 16-20, 2017.
2nd Geometric Algorithms and Methods for Plasma Physics Workshop (GAMPP), Garching, September 12-16, 2017.
Geometric Numerical Integration Oberwolfach Workshop, March 2016. (Organizers: Marlis Hochbruck, Erwan Faou, Christian Lubich and Ernst Hairer)
NumDiff-14 Numerical Solution of Differential and Differential-Algebraic Equations, Martin-Luther University Halle-Wittenberg (Germany), September 2015.
ICMS Workshop: Gradient flows, April 2015, Edinburgh, UK. (Organizers: Carola-Bibiane Schönlieb, Bertrand Düring, Marie-Therese Wolfram).
ICMS Workshop: Stochastic systems simulation and control, March 2015, Edinburgh, UK. (Organizers: S. Malham and A. Wiese, K.E Fard, S. Gray, M. Gubinelli).
International Conference on Geometric Algorithms and Methods for Plasma Physics, USTC, Hefei,

China, May 2014.
Nordic seminar in computational mechanics, Simula research laboratory, Oslo, Norway, October 2013.
Geometric Integration and Discrete Integrability, La Trobe University, Melbourne, Australia, December 2013.
Topics in Numerical Analysis of Differential Equations, Consejo Superior de Investigaciones Cientficas (ICMAT), Madrid, July 2013.
Integrable Algorithms: New Frontiers in Numerical Analysis, Leeds, UK, March 2013.
Workshop on Geometric Numerical Integration Oberwolfach, Germany, March 2011.

Schools and mini-courses.

AARMS/PIMS summer school for PhD students. Instructor of the course on *Structure preserving discretization of differential equations,* Dalhousie University, Halifax, Canada, July 2015.
2023 Structure-preserving Algorithms with Applications Chinese Academy of Sciences, Beijing, China, September 2023.
2024 Summer School in conjunction with SciCADE, July 2024, "Deep learning from the point of view of Numerical Analysis" 2 lectures, Institute of Mathematical Sciences, National University of Singapore, Singapore.
2025 Winter School, "Advanced Numerical Methods for Machine and Deep Learning", Ferrara, Italy, January 2025.

Grants.

2024 Principal Investigator in **REMODEL**, MSCA Staff Exchange programme on the Mathematics of Deep Learning with Applications.
2019-2024 Leader of the training programme of THREAD, ITN, MSCA-H2020.
2019 Principal organiser, Geometry, compatibility and structure preservation in computational differential equations, 6 months scientific programme at the Newton Institute of Mathematical Sciences, Cambridge, UK. Co-organisers: Doug Arnold, Franco Brezzi, Arieh Iserles, Elisabeth Mansfield, Reinout Quispel.
2016 Project coordinator of **CHiPS** Challenges in Structure Preservation, Research and Innovation Staff Exchange project, Marie S. Curie actions, Horizon 2020.
2011 Project coordinator of **CRiSP** Collaborative Research in Structure Preservation, IRSES project EU 7th Framework Program.
2009 Project coordinator of **GeNuIn Applications**, project funded by the Research Council of Norway.

Organization of conferences and schools.

2016/2022/2025 Mathematics Meets Industry a two days event for PhD students, academics and industry.
2018 Organising committee (member): Sci-CADE 2019.
2018 Conference: NUMDIFF-15 to be held 3.-7.9.2018 in Halle (Saale), member of the organising committee.
2017 Workshop: *From computation to information: recent advances in numerical analysis*, to be held at DAMTP, Cambridge UK, August 30th- September 1st, (organiser).
2017 Workshop: *Geometric integration and computational mechanics*, as part of the Foundations of Computational Mathematics Conference, Barcelona (organiser).
2017 Workshop: CHiPS workshop, June 27-30, 2017, Trondheim, Norway (organiser).
2016 Conference: *Mathematics meets industry*, September 2016 in Trondheim. Chair of the organising committee. (Second edition in 2022, Third in 2025).
2016 Organizing committee *Abel symposium: Computation and Combinatorics in Dynamics, Stochastics and Control*, August 2016.
2014 Workshop: *Geometric integration and computational mechanics*, as part of the Foundations of Computational Mathematics Conference, Montevideo (organiser).
2011 Minisymposium: *Algebraic an geometric structures in numerical analysis*, as part of **ICIAM 2011**. Co-organized by Hans Munthe-Kaas and Simon Malham.
1998-2024 MAGIC Manifolds and Geometric Integration Colloquia. I co-organize this annual meeting in collaboration with A. Zanna, H. Munthe-Kaas and B. Owren.

Evaluation work.

2004 - 2024 I served as evaluator and leader of the evaluation committee for promotion to professor and for associate professor positions, at both national and international institutions (USA, UK, Sweden, Italy).
2003 - 2015 I was appointed as evaluator for the EU commission in the 6th and 7th Framework program and

Horizon 2020.
2004 - 2024 I served as evaluator of PhD thesis for both national and international institutions.

Editorial work.

2019 - Member of the editorial board of the SIAM Review
2019 - Member of the editorial board of the Calcolo
2018 - Member of the editorial board of the Journal of Computational Dynamics
2017 - 2022 Member of the editorial board of the Journal of Geometric Mechanics.
2023 - Member of the editorial board of Geometric Mechanics
2021 - Member of the editorial board of Networks and Heterogeneous Media
2024 - Member of the editorial board of Mathematics of Computation
2024 - Member of the editorial board of SIAM Journal of Scientific Computing.

Supervision of MSc and PhD students.

I supervised **23 MSc students** (Industrial Mathematics, at the Department of Mathematical Sciences, NTNU).

I supervised **8 PhD students** as main supervisor, and I'm currently supervising 4 more PhD candidates.

Administrative work.

Member of the board of the Faculty of Information Technology, Mathematics and Electrical Engineering, 2013-2017.
Group leader of the Differential Equations and Numerical Analysis group, Department of Mathematical Sciences, NTNU, 2015-2016.
Deputy Head of the Department of Mathematical Sceinces at NTNU, with responsibility for research, 2021- 2024.

Other responsibilities.

Vice President of ECMI (European Consortium for Mathematics in Industry), from 2024.
Secretary of the Foundation of Computational Mathematics Society, since 2023.
Member of the Scientific Advisory Committee of Science Europe, since 2016-2018 (earlier, member of the ENGITECH committee).
Member of the board of the Norwegian Mathematical Society 2014-2019.
Representative of the Norwegian Mathematical Society at the International Congress of Industrial and Applied Mathematics (ICIAM) 2015-2022.
Leader of Nor-Maths-In, the Norwegian Network of Mathematics in Industry and Innovation, 2014-2023.
Member of the council of Eu-Maths-In, the European Network of Mathematics in Industry and Innovation. (2016-2023)
Member of the awarding committee for the EMS-ECMI Lanczos prize for mathematical software (2023 and 2025).
Member of the awarding committee for PREMIO JOSÉ LUIS RUBIO DE FRANCIA, 2023 and 2024.

Publications

[1] E. Celledoni and I. Moret, *A Krylov projection method for systems of ODEs*, App. Num. Math. 24, pp. 365–368, 1997.

[2] E. Celledoni, *Discrete QMR and BCG in the numerical solution of linear systems of ODEs*, J. CAM 91, pp. 159–177, 1998.

[3] E. Celledoni and A. Iserles, *Approximating the matrix exponential from a Lie algebra to a Lie group*, Math. Comp. 69, pp. 1457–1480, 2000.

[4] E. Celledoni and A. Iserles, *Methods for the approximation of the matrix exponential in a Lie-algebraic setting,* IMA Journal of Numerical Analysis, vol. 21, pp. 463-488, 2001.

[5] E. Celledoni, A. Iserles and S. P. Nørsett and B. Orel, *Complexity theory for Lie-group solvers*, Journal of Complexity, vol. 18, pp. 242–286, 2002.

[6] E. Celledoni and B. Owren, *Lie group methods for rigid body dynamics and time integration on manifolds*, Comput. meth. in Appl. Mech. and Engrg. vol 19, pp. 421–438, 2003.

[7] E. Celledoni, *Isospectral discretizations of the KdV equation*, Journal of Physics A: Mathematical and General 34, pp. 2205-2214, 2001.

[8] E. Celledoni and B. Owren, *A class of low complexity intrinsic ODE solvers for the orthogonal Stifel manifold,* SIAM J. on Num. Anal., Vol. 21, pp. 463–488, 2001.

[9] E. Celledoni and B. Owren, *On the implementation of Lie group methods on the Stiefel manifold,* Numerical Algorithms, vol. 32, pp. 163–183, 2003.

[10] E. Celledoni, A. Marthinsen and B. Owren, *Commutator free Lie group methods*, Future Generation Computer Systems, vol. 19/3, pp. 341–352, 2003.

[11] E. Celledoni and S. Fiori, *Neural Learning by Geometric Integration of Reduced 'Rigid-Body' Equations*, J. CAM, 172, pp. 247-269, 2004.

[12] E. Celledoni, *Eulerian and Semi-Lagrangian schemes based on commutator free exponential integrators*, CRM Proc. Lecture Notes, 39, pp. 77–90, Amer Math. Soc., Providence, RI, 2005.

[13] E. Celledoni and N. Säfström, *Efficient time-symmetric simulation of torqued rigid bodies using Jacobi elliptic functions*, J. Phys. A, 39/19, pp. 5463–5478, 2006.

[14] E. Celledoni and N. Säfström, *A symmetric splitting method for rigid body dynamics*, Model. Identif. Control, 27, no. 2, pp. 95–108, 2006.

[15] E. Celledoni and S. Fiori, *Descent methods for optimization on homogenous manifolds*, Journal of Mathematics and Computers in Simulation, 79 (2008) pp. 1298-1323.

[16] E. Celledoni, D. Cohen and B. Owren, *Symmetric exponential integrators for the cubic Schrödinger equation*, Journal of FoCM, 8 (2008), n. 3, 303–317.

[17] E. Celledoni, F. Fassò, N. Säfström and A. Zanna, *The exact computation of the free rigid body motion and its use in splitting methods*, SIAM Journal on Sci. Stat. Comp. vol. 30 issue 4, pp. 2084-2112, 2008.

[18] E. Celledoni and T. Kvamsdal, *Parallelism in time for the solution of a time dependent Stokes problem*, International Journal of Numerical Methods in Engineering, vol. 79, pp. 576-598, 2009.

[19] E. Celledoni, R. McLachlan, D. McLaren, B. Owren, R. Quispel and W. Wright, *Energy-preserving Runge-Kutta methods.* M2AN (Mathematical Modelling and Numerical Analysis), vol. 43 (4), pp. 645-649, (2009).

[20] E. Celledoni and B.K. Kometa, *Semi-Lagrangian exponential integrators for convection dominated problems.* Journal of Scientific Computing, vol. 41, Issue 1 (2009), pp. 139–164.

[21] E. Celledoni and A. Zanna, *FRB-FORTRAN routines for the exact computation of free rigid body motions*, ACM ToMS, vol. 37 nr. 2 (2010).

[22] E. Celledoni, R. McLachlan, B. Owren, R. Quispel, *On conjugate B-series and their geometric structure.* JNAIAM vol. 5, pp 85-94, (2010).

[23] E. Celledoni, R. McLachlan, B. Owren, R. Quispel, *Energy-preserving integrators and the structure of B-series.* FoCM, vol. 10, pp 673-693 (2010).

[24] E. Celledoni and N. Säfström, *Hamiltonian and multi-symplectic structure of a rod model using quaternions.* CMAME, vol. 199(45-48), pp.2813-2819 (2010).

[25] E. Celledoni and B.K. Kometa, *Semi-Lagrangian multistep methods for index 2 differential algebraic systems*, J. of Comp. Phys. 230, pp 3413-3429 (2011).

[26] E. Celledoni, F. Grimm, R.I. McLachlan, D.I. McLaren, B. Owren, G.R.W. Quispel, *Preserving energy resp. dissipation in numerical PDEs, using the average vector field method*, J. Comp. Phys., vol. 231, pp. 6770-6789 (2011).

[27] E. Celledoni, R.I. McLachlan, B. Owren, G.R.W. Quispel, *Geometric properties of the Kahan's method* . J. of Phys. A, vol. 46, Jan. 2013.

[28] E. Celledoni, H. Marthinsen and B. Owren, *An introduction to Lie group integrators – basics, new developments and applications*, J. Comp. Phys., vol. 257 Part B, pp. 1039–1526, (2014).

[29] E. Celledoni, B. Owren and Y. Sun, *The minimal stage, energy-preserving Runge-Kutta method for polynomial Hamiltonian systems is the Averaged vector Field method.* Math. Comp., vol. 84, pp. 1689–1700, (2014).

[30] E. Celledoni and B. Owren, *Preserving first integrals with symmetric Lie group methods*, arXiv:1302.4702, DCDS A, vol. 34, pp. 977–990, (2014).

[31] E. Celledoni, B.K. Kometa and O. Verdier, *High-order semi-Lagrangian methods for the incompressible Navier-Stokes equations*, J. Sci Computing, vol 66, 2016, 91-115.

[32] E. Celledoni, RI McLachlan, D. McLaren, B. Owren and GWR Quispel, *Integrability properties of Kahan's method*, (2014), J. Phys A, vol 47.

[33] E. Celledoni, RI McLachlan, D. McLaren, B. Owren and GWR Quispel, *Discretization of polynomial vector fields by polarization*, Proceedings of the Royal Society A, Mathematical, Physical and Engineering Sciences, 2015.DOI: 10.1098/rspa.2015.0390

[34] E. Celledoni, M. Eslitzbichler and A. Schmeding, *Shape analysis on Lie groups with applications in computer animation*, arXiv:1506.00783, Journal of Geometric Mechanics (JGM). vol. 8 (3).

[35] E. Celledoni, E. Hoel Høiseth, *The averaged Lagrangian method*, J CAM, vol. 316.

[36] E. Celledoni and L. Li, *Energy-preserving Krylov projection methods for large and sparse linear Hamiltonian systems*, in Progress in Industrial Mathematics at ECMI 2016, vol. 26, P. Quintela et. al. (eds), (2018). Springer.

[37] E. Celledoni, E. H. Høiseth, N. Ramzina, *Passivity-preserving splitting methods for controlled, input-output passive rigid body systems*, Multibody Systems Dynamics (2017), arXiv:1408.2544.

[38] E. Celledoni, S. Eidnes, M. Eslitzbichler, A. Schmeding, *Shape analysis on Lie groups and homogeneous spaces*, in: Nielsen F., Barbaresco F. (eds) Geometric Science of Information. GSI 2017. Lecture Notes in Computer Science, vol 10589. Springer.

[39] E. Celledoni, M. Farré Puiggalí, E. Hoel Høiseth, D. Martin de Diego, *Energy-Preserving Integrators Applied to Nonholonomic Systems*, arXiv:1605.02845v1, Journal of Nonlinear Science, 2018, https://doi.org/10.1007/s00332-018-9524-4.

[40] E. Celledoni, D. I. McLaren, Brynjulf Owren, G. R. W. Quispel *Geometric and integrability properties of Kahan's method: the preservation of certain quadratic integrals,* arXiv:1805.08382, Journal of Physics A, 2019.

[41] B. Tapley, E. Celledoni, B. Owren, H. I. Andersson, *A novel approach to rigid spheroid models in viscous flows using operator splitting methods*, arXiv:1804.02123, Numerical Algorithms, 2019.

[42] E. Celledoni, S. Eidnes, B. Owren, T. Ringholm, *Dissipative numerical schemes on Riemannian manifolds with applications to gradient flows,* arXiv:1804.08104 (2018), SIAM Journal on Scientific Computing. vol. 40 (6).

[43] E. Celledoni and L. Li, *Krylov projection methods for linear Hamiltonian systems,* arXiv:1808.06674, Numerical Algorithms, 2019.

[44] E Celledoni, S Eidnes, A Schmeding *Shape Analysis on Homogeneous Spaces: A Generalised SRVT Framework*, Proceedings of the Abel Symposium 2016, 187-220.

[45] E. Celledoni, S. Eidnes, B. Owren, T. Ringholm, *Energy preserving methods on Riemannian manifolds,* Math Comp. (2019) arXiv:1805.07578.

[46] L. Li and E. Celledoni, *Krylov projection methods for linear Hamiltonian systems* Numer. Alg. 2019.

[47] P. H. van der Kamp, E. Celledoni, R. I. McLachlan, D. I. McLaren, B. Owren, G.R.W. Quispel *Three classes of quadratic vector fields for which the Kahan discretization is the root of a generalised Manin transformation*, J. Physics A, arXiv:1806.05917.

[48] E Celledoni, C Evripidou, D I McLaren, B Owren, G R W Quispel, B K Tapley, P H van der Kamp, *Using discrete Darboux polynomials to detect and determine preserved measures and integrals of rational maps*, arXiv:1902.04715, J. Physics A, 2019, DOI 10.1088/1751-8121/ab294b.

[49] E. Celledoni, P.E. Lystad, N. Tapia, *Signatures in Shape Analysis: an Efficient Approach to Motion Identification*, arXiv:1906.06406. Volume 11712 of the Lecture Notes in Computer Science series, Geometric Science of Information: 4th International Conference, GSI 2019, Toulouse, France, August 27–29, 2019, Proceedings, Pages 21 - 30 DOI 10.1007/978-3-030-26980-7 3.

[50] E. Celledoni, H. S. Gustad, N. Kopylov, H.S. Sundklakk, *Predicting bending moments with deep neural networks*, Volume 11712 of the Lecture Notes in Computer Science series, Geometric Science of Information: 4th International Conference, GSI 2019, Toulouse, France, August 27–29, 2019, Proceedings, Pages 21 - 30 DOI 10.1007/978-3-030-26980-7 3.

[51] Benning, Martin; Celledoni, Elena; Ehrhardt, Matthias J.; Owren, Brynjulf; Schönlieb, Carola-Bibiane. (2019) Deep learning as optimal control problems: models and numerical methods. Journal of Computational Dynamics, 2019.

[52] Tapley, Benjamin; Celledoni, Elena; Owren, Brynjulf; Andersson, Helge Ingolf. (2019) A novel approach to rigid spheroid models in viscous flows using operator splitting methods. Numerical Algorithms.

[53] Celledoni, Elena; McLaren, David; Owren, Brynjulf; Quispel, Reinout. (2019) Geometric and integrability properties of Kahan's method: The preservation of certain quadratic integrals. Journal of Physics A: Mathematical and Theoretical.

[54] Celledoni, Elena; Ehrhardt, Matthias J.; Etmann, Christian; McLachlan, Robert I.; Owren, Brynjulf; Schönlieb, Carola-Bibiane. (2021) Structure preserving deep learning. European journal of applied mathematics, vol 32, 2021.

[55] Celledoni, Elena; Jackaman, James. (2021) Discrete conservation laws for finite element discretisations of multisymplectic PDEs. Journal of Computational Physics, vol 444, 2021.

[56] Celledoni, Elena; Çokaj, Ergys; Leone, Andrea; Murari, Davide; Owren, Brynjulf. (2021) Lie Group integrators for mechanical systems. International Journal of Computer Mathematics, 99, 2022.

[57] Celledoni, Elena; Ehrhardt, Matthias J.; Etmann, Christian; Owren, Brynjulf; Schönlieb, Carola-Bibiane; Sherry, Ferdia. (2021) Equivariant neural networks for inverse problems. Inverse Problems.

[58] Andersson, Helge Ingolf; Celledoni, Elena; Ohm, Laurel; Owren, Brynjulf; Tapley, Benjamin. (2021) An integral model based on slender body theory, with applications to curved rigid fibers . Physics of Fluids, 33, 2021.

[59] Celledoni, Elena; Evripidou, Charalambos; McLaren, David I.; Owren, Brynjulf; Quispel, G.R.W.; Tapley, Benjamin Kwanen. (2022) DETECTING AND DETERMINING PRESERVED MEASURES AND INTEGRALS OF BIRATIONAL MAPS. Journal of Computational Dynamics

[60] Tapley, Benjamin Kwanen; Andersson, Helge Ingolf; Celledoni, Elena; Owren, Brynjulf. (2022) Computational geometric methods for preferential clustering of particle suspensions. Journal of Computational Physics

[61] Celledoni, Elena; Leone, Andrea; Murari, Davide; Owren, Brynjulf. (2022) Learning Hamiltonians of constrained mechanical systems. Journal of Computational and Applied Mathematics

[62] Bogfjellmo, Geir; Owren, Brynjulf Rustad; Celledoni, Elena; McLachlan, Robert I.; Quispel, Gilles Reinout Willem. (2023) Using aromas to search for preserved measures and integrals in Kahan's method. Mathematics of Computation, 93 (348).

[63] Celledoni, Elena; Glöckner, Helge; Riseth, Jørgen Nilsen; Schmeding, Alexander. (2023) Deep neural networks on diffeomorphism groups for optimal shape reparametrization. BIT Numerical Mathematics, 63 (4), 50.

[64] Elena Celledoni, Davide Murari, Brynjulf Owren, Carola-Bibiane Schönlieb, Ferdia Sherry, Dynamical Systems–Based Neural Networks, SIAM Journal on Scientific Computing, vol 45, 2023.

[65] M Arnold, E Celledoni, E Çokaj, B Owren, D Tumiotto, B-stability of numerical integrators on Riemannian manifolds, JCD, January, 2024.

[66] F Sherry, E Celledoni, MJ Ehrhardt, D Murari, B Owren, CB Schönlieb, Designing stable neural networks using convex analysis and odes, Physica D: Nonlinear Phenomena 463, 2024.

[67] Elena Celledoni, Ergys Çokaj, Andrea Leone, Sigrid Leyendecker, Davide Murari, Brynjulf Owren, Rodrigo T Sato Martín de Almagro, Martina Stavole, Neural networks for the approximation of Euler's elastica, CMAME, 2025.

[68] E Celledoni, J Jackaman, D Murari, B Owren, Predictions Based on Pixel Data: Insights from PDEs and Finite Differences, arXiv preprint arXiv:2305.00723, JCP 2025.

[69] H Noren, S Eidnes, E Celledoni, Learning dynamical systems from noisy data with inverse-explicit integrators, arXiv preprint arXiv:2306.03548, Physica D, 2025.

Preprints

[70] E. Celledoni, E. H. Høiseth, *Energy-Preserving and Passivity-Consistent Numerical Discretization of Port-Hamiltonian Systems* arXiv:1706.08621 (2017).

[71] M. Ghirardelli, B. Owren, E. Celledoni, *Conditional Stability of the Euler Method on Riemannian Manifolds*, arXiv:2503.09434.

[72] A. De Marinis, D. Murari, E. Celledoni, N. Guglielmi, B. Owren, F. Tudisco, *Approximation properties of neural ODEs*, arXiv:2503.15696.

[73] M. Dyring Hansen, E. Celledoni, B. K. Tapley, *Learning mechanical systems from real-world data using discrete forced Lagrangian dynamics*, arXiv:2505.20370.

Edited proceedings and special issues

[74] J. Amundsen, H. I. Andersson, E. Celledoni, T. Gravdahl, F. A. Michelsen, H. R. Nagel, T. Natvig (eds.), Proceedings of the 46th Conference on Simulation and Modeling (SIMS 2005), 13-14 October 2005, Trondheim, Norway. Trondheim, Tapir Academic Press. ISBN 82-519-2093-0. 364 s.

[75] E. Celledoni, J. M. Sanz-Serna and A. Zanna Munthe-Kaas editors, special issue in honour of Arieh Iserles' 65th birthday, Discrete and Continuous Dynamical Systems A, vol. 34, nr. 3, March 2014.

[76] E. Celledoni, G. Di Nunno, K. Ebrahimi-Fard, H. Munthe-Kaas editors, Proceedings of the Abel Symposium 2016, Springer.

[77] E. Celledoni, K. Ebrahimi-Fard, A. Zanna, Theoretical and computational aspects of dynamical systems. JCD, 2024.

Reports for the Research Council of Norway

[78] G. Gisler, E. Celledoni, T.U. Helgaker, T. Iversen, K.S. Jakobsen, C. Jones, A. Lipniacka, A. Lundervold, N.R.B. Olsen, K. De Smedt, J. Koster, G. Høst, 2010, The scientific case for eInfrastructure in Norway, published by the Norwegian Research Council, ISBN 978-82-12-02831-9.

[79] G. Gisler, D. Borge, E. Celledoni, T.U. Helgaker, C. Jones, A. Lipniacka, A. Lundervold, S. Oepen, N.R.B. Olsen, J. Koster, G. Høst, 2010, eInfrastructure use roadmap, published by the Norwegian Research Council, ISBN 978-82-12-03055-8.

[80] E. Celledoni, B.I. Dundas, I.K. Glad, F. Gotliebsen, K. Seip and R. Winther, 2013, Follow-up plan for the evaluation of research in mathematics, published by the Norwegian Research Council, ISBN 978-82-12-03266-8.