CURRICULUM VITAE: Norbert Euler

Date of this document: November 2024.

PERSONAL DETAILS

Place of birth: Darmstadt (Germany), 25 May 1964.
Nationality: German
Email address: *Dr.Norbert.Euler@gmail.com* or *ocnmp@episciences.org*

CURRENT AFFILIATION:

President of the ISNMP (since November 2023 - ongoing)
International Society of Nonlinear Mathematical Physics (ISNMP)
Auf der Hardt 27, 56130 Bad Ems
Germany
Website: *isnmp.de/*
and
Visiting Researcher (since May 2019 - ongoing)
Centro Internacional de Ciencias
Av Universidad s/n Colonia
Chamipla, 62210 Cuernavaca, Morelos
Mexico

Former position: October 1996 – April 2019:

Full Professor
Department of Mathematics,
Luleå University of Technology, Luleå
Sweden.

ACADEMIC QUALIFICATIONS

1. **Baccalaureus Scientiae (B.Sc)** (Mathematical Physical Science). Awarded in 1986. Rand Afrikaans University, Johannesburg, RSA
   Main subjects: Mathematics, Theoretical Physic, Physics.

2. **Baccalaureus Scientiae cum Honoribus (B.Sc Hons.)** in Mathematical Physics/Theoretical Physics. Awarded *Cum Laude* in 1987. Rand Afrikaans University, Johannesburg, RSA

Main subjects: Lie Algebras, General Relativity, Mathematical Methods in Physics, Quantum Field Theory, Electromagnetic Wave Theory, Statistical Physics, Solid State Physics.

3. **Magister Scientiae (M.Sc)** Mathematical Physics/Theoretical Physics.
   Awarded *Cum Laude* 1988 Rand Afrikaans University, Johannesburg, RSA.
   Thesis title: *Nonlinear field equations and Painlevé test.*
   Advisor: Willi-Hans Steeb.

4. **Philosophiae Doctor (Ph.D)** in Applied Mathematics.
   Awarded 1992 by the Rand Afrikaans University, Johannesburg, RSA
   Dissertation: *Continuous symmetries, Lie algebras and differential equations.* Advisor: Willi-Hans Steeb

5. **Docent (Associate Professor)** in Mathematics.
   Awarded in Dec. 1999 by Luleå University of Technology (Sweden)

6. **Professor of Mathematics**.
   Awarded in February 2002 by Luleå University of Technology (Sweden)

ACADEMIC APPOINTMENTS (details)

1. **January 1988– December 1990**:
   Visiting Lecturer, Department of Theoretical Physics,
   Rand Afrikaans University, RSA.

2. **January 1990–September 1992**:
   Lecturer (permanent), Department of Applied Mathematics,
   Rand Afrikaans University, RSA.

3. **September 1992–December 1994:**
   Assistant Professor (permanent),
   Department of Applied Mathematics,
   Rand Afrikaans University, RSA.

4. **October 1995 – April 1996:**
   Visiting Researcher and Lecturer, Department of Mathematics,
   Technical University of Darmstadt, Germany.

5. **October 1996 – March 1999:**
   Visiting Assistant Professor, Department of Mathematics,
   Luleå University of Technology, Luleå, Sweden.

6. **April 1999 – December 1999**
   Assistant Professor (permanent), Department of Mathematics,
   Luleå University of Technology, Luleå, Sweden.

7. **December 1999 – March 2002**
   Associate Professor (permanent), Department of Mathematics,
   Luleå University of Technology, Luleå, Sweden.

8. **February 2002 – April 2019**
   Full Professor (permanent), Department of Mathematics (now Division of Mathematics in the Department of Engineering Sciences and Mathematics)
   Luleå University of Technology, Luleå, Sweden.

9. **May 2019 – ongoing**
   Visiting Research Professor
   Centro Internacional de Ciencias
   Av Universidad s/n Colonia
   Chamipla, 62210 Cuernavaca, Morelos
   Mexico

10. **November 2023 – ongoing**
    President of the ISNMP
    International Society of Nonlinear Mathematical Physics (ISNMP)
    Auf der Hardt 27, 56130 Bad Ems
    Germany
    Website: isnmp.de/

JOURNAL EDITORIAL APPOINTMENTS

- **Editor-in-Chief.** June 1997– December 2020:
  Journal: *"Journal of Nonlinear Mathematical Physics"* Publisher: Springer

- **Editor-in-Chief.** April 2021– Ongoing.
  Journal: *"Open Communications in Nonlinear Mathematical Physics"*
  (A diamond open access journal that is overlayed on the arXiv)
  Published by the Editorial Board on the Episciences Platform.
  https://ocnmp.episciences.org/

- **Managing Editor.** November 2024 – Ongoing
  The ISNMP Diamond Open Access Book Series
  Published by the International Society of Nonlinear Mathematical Physics
  Website: isnmp.de/Publications/

INVITED RESEARCH VISITS:

1. Department of Mathematics, **University of Catania**:
   Duration of Visit: 2 weeks during 1993.
   Invite by Prof. M. Torrisi

2. **Institute of Mathematics, Ukrainian Academy**, Kiev, Ukraine:
   Duration of Visit: 7 months during 1994 and 4 months during 1995.
   Invited by Prof. W.I. Fushchich

3. **International Scientific Institute**, Cuernavaca, Mexico:
   Duration of Visit: 2 weeks during 1999.
   Invited by Prof. F. Calogero

4. Department of Mathematics, **University of Cadiz**, Cadiz, Spain:
   Duration of Visit: 2 weeks during 2000.
   Invited by Prof. M.L. Gandarias

5. **Mittag-Leffler Institute**, Stockholm, Sweden:
   Visiting Professor: 1 months during November 2005.
   Invited by Prof. A. Constantin (Lund University).
   Programme title: *"Wave Motion"*.
   Organizers: A. Constantin, Lund; C. Dafermos, Brown; H. Holden, Trondheim; K. H. Karlsen, Trondheim; W. Strauss, Brown. Meeting took place during October 2005–December 2005.

6. **University of Kwazulu-Natal**, Durban, South Africa:
   Visiting Professor: 3 months during April to June 2006.
   Invited by Prof. P.G.L. Leach (Department of Mathematics, University of Kwazulu-Natal).

7. **Erwing Schrödinger Institut of Mathematical Physics**, Vienna, Austria:
   Visiting Professor: 2 weeks during May-June 2011.
   Invited by Prof. A. Constantin (University of Vienna).

8. **New Jersey Institute of Technology, Department of Mathematics**, NJ, USA:
   Sabbatical Leave: 3 months during May to August 2012.
   Financed by a sabbatical grant awarded by the Wenner-Gran Foundation in Sweden.
   Invited by Prof. D. Blackmore (NJIT).

9. **University of Santiago, Chile, Department of Mathematics and Computational Sciences**, Santiago, Chile:
   Visiting Professor: 19 - 28 April 2018.
   Invited by Prof. E. Reyes (University of Santiago)

10. **Jinan University, Department of Mathematics**, Guangzhou P.R. China:
    Visiting Professor: 21 - 27 September 2019.
    Invited by Professor Zhang Chuanlin (Jinan University)

RESEARCH SUBJECT:

Nonlinear Ordinary- and Partial Differential Equations in Mathematical Physics: Integrability; Linearization; Continuous-, Discrete-, and Nonlocal-Symmetry; Recursion Operators, Solution Methods.

AMS Mathematics Subject Classification:
37K35, 37K10, 37K55, 37K15, 37J15, 35Q53, 35Q55, 34A05, 34A25, 34A34, 34M55.

TEACHING ACTIVITIES:

Undergraduate:

- Ordinary differential Equations (2nd year level: 100+ students))
- Classical Mechanics (1st year level: 100+ students)
- Vector Analysis (2rd year: 100+ students)
- Linear Algebra: Eucidean Spaces (2nd year level: 1000 students)
- Linear Algebra: Generalized Vector Spaces (2nd year level: 100+ students)

- Differential Calculus (1st year level: 150+ students)
- Integral Calculus (2nd year level: 100+ students)
- Algebraic Mathods in Physics (4th year level: 20+ students)

Examiner for the course *Mathematics for Engineers: Integral Calculus and Linear algebra* (2nd year level: 600+ students)

Graduate Teaching:

- Lie Point Symmetry Analysis for Differential Equations (PhD level)
- Algebraic Methods in Physics (PhD level)

Supervision of Master (MSc) and Licentiate students in Applied Mathematics:

- R. Näslund (licentiate): Some studies within applied mathematics with focus on conditional symmetries of partial differential equations and bending waves in plates (2005)
- A. Köhler (MSc): On Approximate and Conditional Symmetries of Evolution Equations (1994).

- (Co-supervisor with M. Euler) A. Strömberg and E. Åström (Masters): Transformation between a generalized Emden-Fowler equation and the first Painlevé transcendent (2003).
- C. Türk (Masters): Discrete symmetries of nonlinear ordinary differential equations (2003)
- O. Lindblom (Licentiate): Investigation of bending waves in plates and properties of nonlinear wave equations (1997)
- (Co-supervisionwith M. Euler) N. Petresson (Master): Classes of linearisable hierarchies of evolution equations in 1+1 dimensions (2002)
- (Co-supervision with M Euler) J. Häggblad (Masters): Symmetries and recursion operators of nonlinear differential equations (2006)
- J.D. Duxans (Masters): Potential symmetries (2009)

Supervision of PhD in Applied Mathematics:

- O. Lindblom: Painlevé analysis and transformations for nonlinear partial differential equations (2001)

RESEARCH-RELATED PROFESSIONAL SERVICE:

- Member of the **Global Organizing Committee** for the *3rd World Congress for Nonlinear Analysts* held in Catania (Italy) July 2000

- **External Examinator** for a **Ph.D**:
  Place: Department of Mathematics, **Cadiz University, Spain**.
  Student: M.S. Bruzon.
  Title of Thesis: *Diffusion equations with variable coefficients: Symmetry Properties*
  Supervisor: M. Luz Gandarias.
  Examinators: N. Euler and M. Euler.
  Date of Defence: April 2000.
  Result of Evaluation: Pass.

- **External Examinator** for a **Ph.D**:
  Place: Department of Mathematics, **Cairo University, Egypt**.
  Student: Amany Saad Abou-Srea
  Title of Thesis: *Singular Manifold Analysis and Integrability Properties of Some Systems of Nonlinear Partial Differential Equations.*
  Supervisor: H. I. A Gawad
  Examinator: N. Euler
  Date of Examination: April 2003.
  Result of Evaluation: Pass.

- **Referee as Pedagogic Expert for an Associate Professorship:**
  Docent Lecture presented by Dr. Liuming Wu.
  Discipline: Organic Chemistry.
  Institution: Luleå University of Technology.
  Title of Talk: *Surface Complexation at Solid-Water Interface.* Date of Presentation: June 9, 2000.

- **Referee for a Full Professorship in Canada:**
  Candidate: Dr. Thomas Wolf.
  Discipline: Mathematics
  Institution: University of Brock, Canada.
  Date of Evaluation: December, 2002.

- **Main Organizer of the conference titled** *Nonlinear Mathematical Physics: Twenty Years of JNMP* at the Sophus Lie Center in Nordfjordeid, Norway
  June 4 - 14, 2013.

- **Main Organizer of the conference titled** *The 2nd JNMP Conference in Nonlinear Mathematical Physics: 2019*
  to take place at the University of Santiago, Chile, May 26 to June 4, 2019.

- Co-Organizer of the conference entitled *Open Communications in Nonlinear Mathematical Physics* - 23–29 June 2024 in Bad Ems, Germany.

- **Reviewer** of research papers for many journals, including the following:
  Journal of Mathematical Physics (New York, USA)
  Journal of Computational and Applied Mathematics (Wilrijk, Belguim)
  Journal of Nonlinear Mathematical Physics (Luleå, Sweden)
  Journal of Computational and Applied Mathematics (Elsevier)
  Electronic Journal of Differential Equations (SW Texas Sate Univ.)
  Philosophical Transactions of the Royal Society: Mathematical, Physical and Engineering Sciences (The Royal Society, UK)
  Reports in Mathematical Physics (Kraków, Poland), and others.

Talks have been presented at many conference and events since 1987: (details are not listed here)

PUBLISHED PEER REVIEWED ARTICLES:

1. Steeb W-H and Euler N, *Painlevé Test of the McKean and Carleman Models*, **Lett. Math. Phys.**, **13**, 234–236, 1987

2. Steeb W-H and Euler N, *Lie and Lie Bäcklund Vector Fields and Painlevé Test for a Class of Scale Invariant Partial Differential Equations of First Order*, **Prog. Theor. Phys. 78**, 214–223, 1987.

3. Euler N, Leach P G L, Mahomed F M and Steeb W-H, *Symmetry Vector Fields and Similarity Solutions of a Nonlinear Field Equation Describing the Relaxation to a Maxwell Distribution*, **Int. J. Theor. Phys. 27**, 717–723, 1988.

4. Steeb W-H and Euler N, *A Note on Nambu Mechanics and Painlevé Test*, **Prog. Theor. Phys. 80**, 607–610, 1988

5. Euler N and Steeb W-H, *Painlevé Test and Discrete Botzmann Equations*, **Aust. J. Phys. 42**, 1–10, 1989.

6. Euler N and Steeb W-H and Cyrus K, *On exact solutions for damped anharmonic oscillators*, **J. Phys. A: Math. Gen. 22**, L195–L199, 1989.

7. Euler N and Steeb W-H, *Lie-Symmetry Vector Fields for Linear and Nonlinear Wave Equations*, **Int. J. Theor. Phys. 28**, 1397–1403, 1989.

8. Euler N and Steeb W-H, *Polynomial Field Theories and Nonintegrability*, **Physica Scripta 41**, 289–291, 1990.

9. Duarte L G S, Euler N, Moreira I C and Steeb W-H, *Invertible point transformations, Painlevé analysis and anharmonic oscillators*, **J. Phys. A: Math. Gen. 23**, 1457–1463, 1990.

10. Steeb W-H and N Euler, *Inviscid Burgers Equation, Painlevé Analysis and*
a Bäcklund Transformation, **Z. Naturforschung A**, **45A**, 929–930, 1990.

11. Steeb W-H and Euler N, *Nonlinear Dynamical Systems, First Integrals, Bose Operators and Lie Algebras*, **Found. Phys. Lett. 3**, 367–374, 1990.

12. Steeb W-H, S.J.M Brits and Euler N, *Painlevé Test and Energy Level Motion*, **Int. J. Theor. Phys. 29**, 637–642, 1990.

13. Steeb W-H and Euler N, *A Note on Nambu Mechanics*, **Nuovo Cimento B**, 263–272, 1991.

14. Steeb W-H, Euler N and Mulser P, On a Hierarchy of Nonlinear Dynamical Systems and Painleve Test, **Found. of Phys. 4**, 465-469, 1991.

15. Duarte L G S, Moreira N, Euler N and Steeb W-H, *Invertible Point Transformations, Lie Symmetries and the Painlevé Test for the Equation* $\ddot{x} + f_1(t)\dot{x} + f_2(t)x + f_3(t)x^n = 0$, **Physica Scripta 43**, 449–451, 1991.

16. Steeb W-H, Euler N and Mulser P, *Semiclassical Jaynes-Cummings Model, Painlevé Test and Exact Solutions*, **J. Math. Phys. 32**, 3405–3406, 1991.

17. Euler N, Steeb W-H and Mulser P, *Lie Bäcklund Vector Fields and Similarity Solutions*, **J. Phys. Soc. Jpn. 60**, 1132–1133, 1991.

18. Euler N, Steeb W-H, Duarte L G S and Moreira I C, *Invertible Point Transformation, Painlevé Test and the Second Painlevé Transcendent*, **Int. J. Theor. Phys. 30**, 1267–1271, 1991.

19. Euler N, Steeb W-H and Mulser P *Symmetries of a Nonlinear Equation in Plasma Physics*, **J. Phys. A: Math. Gen. 24**, L785–L787, 1991.

20. Steeb W-H, Euler N and Mulser P, *A note on Integrability and Chaos of Reduced Self-dual Yang-Mills Equations and Yang-Mills Equations*, **Nuovo Cimento 106B**, 1059, 1991.

21. Steeb W-H and Euler N, *Nonlinear Evolution Equation and Painlevé Test*, **Int. J. Mod. Phys. 7**, 1669–1683, 1992.

22. Steeb W-H and Euler N, *Parametrically Driven Pendulum and Exact Solutions*, **Int. J. of Theor. Phys. 31**, 1527–1530, 1992.

23. Hereman W, Steeb W-H and Euler N, *Comment on 'Towards the conservation laws and Lie symmetries for the Khokhlov-Zabolotskaya equation in three dimensions'*, **J. Phys. A: Math. Gen. 25**, 2417–2418, 1992.

24. Euler N, Shul'ga M W and Steeb W-H, *Approximate symmetries and approximate solutions for a multidimensional Landau-Ginzburg equation*, **J. Phys. A: Math. Gen. 25**, L1095–L1103, 1992.

25. Wepener V, Euler N, van Vuren J H J, du Preez H H and Köhler A, *The development of an aquatic toxicity index as a tool in the operational management of water quality in the Olifants River (Kruger National Park)* koedoe **35/2**, 1–9, 1992.

26. Steeb W-H, Euler N, and Hereman W, *A note on the Zakharov equation and Lie symmetry vector fields*, **Nuovo Cimento 107B**, 1211–1213, 1992.

27. Steeb W-H and Euler N, *Nonlinear evolution equations and Painlevé test* in *Computational and Applied Mathematics II: Differential Equations* **Sel. Rev. Pap.** IMACS 13th World Congr., Dublin/Irel., 227-236, 1992.

28. Euler N, Shul'ga M. W and Steeb W-H, Lie symmetries and Painlevé test for explicitly space- and time-dependent nonlinear wave equations, **J. Phys. A: Math. Gen. 26**, L307–L313, 1993.

29. Euler N and Steeb W-H, *Nonlinear differential equations, Lie symmetries and the Painlevé test*, in Modern Group Analysis, ed. Ibragimov N.H, Torrisi M. and Valenti A, 209–215, **Kluwer Acad. Publ.**, Dordrecht, 1993.

30. Steeb W-H and Euler N, *Externally driven nonlinear oscillator, Painlevé test, first integrals and Lie symmetries*, **Z. Naturforschung A 48a**, 1993.

31. Euler N and Köhler A and Fushchich W.I, *Q-symmetry generators and exact solutions for nonlinear heat conduction*, **Physica Scripta**, **49**, 518–524, 1994.

32. Euler N and Euler M, *Symmetry properties of the approximations of multidimensional generalized van der Pol equations*, **J. Nonlinear Math. Phys.**, **1**, 41–59, 1994.

33. Euler M, Euler N and Köhler A, *On the construction of approximate solutions for a multidimensional nonlinear heat equation*, **J. Phys. A: Math. Gen.**, **27**, 2083–2092, 1994.

34. Euler N, Euler M and Köhler A, *Conditional and approximate symmetries for a generalized van der Pol equation*, **J. Lie Groups and Their Appl.**, **1**, 79–94, 1994.

35. Euler N, *Painlevé analysis and conditional auto-Bäcklund transformations for a two-dimensional Boltzmann model*, **Dopov./Dokl. Akad. Nauk Ukraini 8**, 42–48, 1994.

36. Euler M, Euler N, Zachary W.W., Mahmood M.F. and Gill T.L, *Symmetry classification for a coupled nonlinear Schrödinger equation*, **J. Nonlinear Math. Phys.**, **1**, 358–379, 1994.

37. Basarab-Horwath P, Euler N, Euler M and Fushchych W I *Amplitude-phase representation for solutions of nonlinear d'Alembert equations*, **J. Phys. A: Math. Gen.**, **28**, 6193–6201, 1995.

38. Euler N and Euler M, *Madelung representation for complex nonlinear d'Alembert equation in n-dimensional Minkowski space*, **J. Nonlinear Math. Phys.**, **2**, 292–300, 1995.

39. Euler N *Transformation properties of* $\ddot{x} + f_1(t)\dot{x} + f_2(t)x + f_3(t)x^n = 0$, **J. Nonlinear Math. Phys.**, **4**, 310–338, 1997.

40. Euler M, Euler N and O. Lindblom *Symmetry for a class of explicitly space- and time-dependent (1+1)-dimensional wave equations*, Proceedings of **Natl. Acad. Sci. Ukraine**, Inst. Math., Kiev. The 2nd Internation Conference on *Symmetry in Nonlinear Mathematical Physics*, Vol. 1 70–78, 1997.

41. Euler N, Lindblom O., Euler M and Persson L-E *The higher dimensional Bateman equation and Painlevé analysis of nonintegrable wave equations*, Proceedings of **Natl. Acad. Sci. Ukraine**, Inst. Math., Kiev. The 2nd Internation Conference on *Symmetry in Nonlinear Mathematical Physics*, Vol. 1 185–192, 1997.

42. Euler M, Euler N and Lindblom O. *Explicitly space- and time-dependent d'Alembert equations with symmetries*, **Int. J. Mod. Phys. A 14**, 4189 – 4200, 1999.

43. Euler N and Lindblom O, *n-Dimensional Bateman equation and the Painlevé analysis of wave equations*, **Int. J. Diff. Eqs. and Appl.**, **1**, 205–223, 2000

44. Euler N, Gandarias M L, Euler M and Lindblom O, *Auto-hodograph transformations for a hierarchy of nonlinear evolution equations*, **J. Math. Anal. Appl. 257**, 21-28, 2001.

45. Euler M and Euler N *n-Dimensional real wave equations and the d'Alembert-Hamilton system*, **Nonlinear Anal. Ser. A: Theory Methods**, **47** (8), 5125-5133, 2001.

46. Euler N and Lindblom O, *On discrete velocity Boltzmann equations and the Painleve analysis*, **Nonlinear Anal. Ser. A: Theory Methods**, **47** (2), 1407-1412, 2001.

47. Euler N and Euler M, A tree of linearisable second-order evolution equations by generalised hodograph transformations , **J. Nonlinear Math. Phys. 8**, 342-362, 2001.

48. Lindblom O and Euler N, *Solutions of Discrete-Velocity Bolzmann Equations via Bateman and Riccati Equations*, **Teoret. Mat. Fiz. 131**, 595–608, 2002.

49. Euler N, Wolf T, Leach P G L and Euler M, *Linearisable Third Order Ordinary Differential Equations and Generalised Sundman Transformations: The Case $X''' = 0$*, **Acta Appl. Math. 76**, 89–115, 2003.

50. Euler M, Euler N, Petersson N, *Linearisable Hierarchies of Evolution Equations in (1+1) Dimensions*, **Stud. Appl. Math.**, **111**, 315–337, 2003.

51. Euler N and Leach P G L, *First Integrals and Reduction of a Class of Nonlinear Higher Order Ordinary Differential Equations*, **J. Math. Anal. Appl.**, **287** (2), 473–486, 2003.

52. Petersson N, Euler N, and Euler M, *Recursion Operators for a Class of Integrable Third-Order Evolution Equations*, **Stud. Appl. Math.**, **112**, 201–225, 2004.

53. Euler N and Euler M, *Sundman Symmetries of Nonlinear Second-Order and Third-Order Ordinary Differential Equations*, **J. Nonlinear Math. Phys.**, **11**, 399–421, 2004.

54. Euler M, Euler N and Leach PGL, *The Riccati and Ermakov-Pinney Hierarchies*, **J. Nonlinear Math. Phys.**, **14**, 290–302, 2007

55. Euler M, Euler N, A Strömberg and E Åstrm, *Transformation between a Generalised Emden-Fowler Equation and the First Painlevé Transcendent*, **Math. Meth. Appl. Sci. 30**, 2121–2124, 2007

56. Euler M and Euler N, *Second-order recursion operators of third-order evolution equations with fourth-order integrating factors*, **J. Nonlinear Math. Phys.**, **14**, 313-315, 2007

57. Calogero F, Euler M and Euler N, *New evolution PDEs with many isochronous solutions*, **J. Math. Anal. and Appl.**, **353**, 481-488, 2009

58. Euler N and Leach PGL, *Aspects of proper differential sequences of ordinary differential equations.* Accepted 16 September 2008 in **Theor. and Math. Phys.**, **159**, 474-487, 2009.

59. Euler M, Euler N and Lundberg S, *On reciprocal-Bäcklund transformations of autonomous evolution equations.* **Theor. and Math. Phys.**, **159**, 770-778, 2009.

60. Euler N and Euler M, *On nonlocal symmetries, nonlocal conservation laws and nonlocal transformations of evolution equations: Two linearisable hierarchies*, **J. Nonlinear Math. Phys.**, **16**, 489-504, 2009.

61. Leach PGL and Euler N, *A novel Riccati sequence*, **J. Nonlinear Math. Phys.**, **16** Suppl., 157-164, 2009.

62. Euler N and Euler M, *Multipotentialisation and iterating-solution formulae: The Krichever-Novikov equation*, **J. Nonlinear Math. Phys.**, **16** Suppl., 93-106, 2009.

63. Leach PGL, Warne R R, Caister N, Naicker V and Euler N, *Symmetries, Integrals and Solutions of Ordinary Differential Equations of Maximal Symmetry*, **Proc. Indian Acad. Sci (Math. Sci.) 120**, 1, 113-130, 2010.

64. Euler M, Euler N and Leach PGL, *Properties of the Calogero-Degasperis-Ibragimov-Shabat differential sequence*, **Lobachevskii Journal of Mathematics**, **32**, 1, 61-69, 2011.

65. Euler N and Euler M, *The converse problem for the multipotentialisation of evolution equations and systems*, **J. Nonlinear Math. Phys. 18** Suppl. 1, 77-105, 2011.

66. Euler M and Euler N, *A class of semilinear fifth-order evolution equations: Recursion operators and multipotentialisations*, **J. Nonlinear Math. Phys.**, **18** Suppl. 1, 61-75, 2011.

67. Euler M and Euler N, Integrating factors and conservation laws for some Camassa-Holm type equations, Commun. Pure Appl. Anal., 11, 1421-1430, 2012.

68. Euler M, Euler N and Wolf T, The two-component Camassa-Holm equations CH(2,1) and CH(2,2): First-order integrating factors and

conservation laws, **J. Nonlinear Math. Phys.**, **19** Suppl. 1, 1240002 (10 pages), 2012.

69. Euler M and Euler N, An alternate view on symmetries of second-order linearisable ordinary differential equations, **Lobachevskii Journal of Mathematics**, **33**, 191-194, 2012.

70. Euler N, Linear operators and the general solution of elementary linear ordinary differential equations without Ansätze, **Community of Ordinary Differential Equations Educators**, CJ12-1802 , [Visit C-ODE-E] May 2012.

71. Euler M and Euler N, Invariance of the Kaup-Kupershmidt equation and triangular auto-Bäcklund transformations, **J. Nonlinear Math. Phys.**, **19**, 1220001-1-7, 2012.

72. Euler M, Euler N and Nucci M C, On nonlocal symmetries generated by recursion operators: second-order evolution equations, **Discrete and Continuous Dynamical Systems: Series A**, **37** nr. 8, 4239-4247, 2017.

73. Euler M, Euler N and Reyes E G, Multipotentialisation and nonlocal symmetries: Kupershmidt, Kaup-Kupershmidt and Sawada-Kotera equations, **J. Nonlinear Math. Phys.**, **24** nr. 3, 303-314, 2017.

74. Euler N and Reyes E G, *Local and Nonlocal Symmetries in Mathematical Physics*, Preface, **J. Nonlinear Math. Phys.**, **24** Supplement 1, 1-2, 2017.

75. Euler M and Euler N, Nonlocal invariance of the multipotentialisations of the Kupershmidt equation and its higher-order hierarchies: 317-351, in *Nonlinear Systems and Their Remarkable Mathematical Structures* edited by N Euler, **CRC Press** (Boca Raton, USA), 2018.

76. Euler M and Euler N, On Möbius-invariant and symmetry-integrable evolution equations and the Schwarzian derivative, **Studies in Applied Mathematics**, 2019; 143(2), 139–156, *https://doi.org/10.1111/sapm.12268*

77. Hernandez Heredero R, Euler M, Euler N and Reyes E G, Compacton equations and integrability: The Rosenau-Hyman and Cooper-Shepard-Sodano equations **Discrete & Continuous Dynamical Systems - A**, 2020, 40(1): 529-548 doi: 10.3934/dcds.2020021

78. Euler M and Euler N, On the hierarchies of the fully nonlinear Möbius-invariant and symmetry-integrable equations of order three, **J. Nonlinear Math. Phys.**, **27** nr. 4, 521–528, 2020.

79. Euler M, Euler N and Nucci M C, Ordinary differential equations invariant under two-variable Möbius transformations, **Applied Mathematics Letters**, **117**, 2021, 107105, https://doi.org/10.1016/j.aml.2021.107105

80. Euler M, Euler N and Nucci MC, On differential equations invariant under two-variable Mbius transformations, **Open Commun. Nonlinear Math. Phys.**, **2**, pp 173–185, 2022, *ocnmp:10200* https://doi.org/10.46298/ocnmp.10200

81. Euler M and Euler N, On fully-nonlinear symmetry-integrable equations with rational functions in their highest derivative: Recursion operators, **Open Commun. Nonlinear Math. Phys.**, **2**, pp 216–228, 2022, *ocnmp:10306* https://doi.org/10.46298/ocnmp.10306

82. Euler M and Euler N, Potentialisations of a class of fully-nonlinear symmetry-integrable evolution equations **Open Commun. Nonlinear Math. Phys.**, **4**, pp 44–78, 2024, *ocnmp:13214* https://doi.org/10.46298/ocnmp.13214

83. Euler M and Euler N, On 2nd-order fully-nonlinear equations with links to 3rd-order fully-nonlinear equations, **Open Commun. Nonlinear Math. Phys.**, **Special Issue 2**, pp 158–170, 2024, *ocnmp:13765* https://doi.org/10.46298/ocnmp.13765

Published Books:

Research-Level Books:

1. Steeb W-H and Euler N, *Nonlinear Field Equations and Painlevé Test*, **World Scientific Publishing**, Singapore/New Jersey/Hong Kong, 1988.

2. Euler N and Steeb W-H, *Continuous Symmetries, Lie Algebras and Differential Equations*, **B.I Wissenschaftsverlag**, Mannheim/Wien/Zürich, 1992.

3. Euler N (ed), *Nonlinear Systems and Their Remarkable Mathematical Structures: Volume 1*, **CRC Press** (Boca Raton, USA), 582 pages, 2018.

4. Euler N and Nucci MC (eds), *Nonlinear Systems and Their Remarkable Mathematical Structures: Volume 2*, **CRC Press** (Boca Raton, USA), 540 pages, 2019.

5. Euler N and Zhang D-J (eds), *Nonlinear Systems and Their Remarkable Mathematical Structures: Volume 3. Contributions from China*, **CRC Press** (Boca Raton, USA), 540 pages, 2021.

Special Issues Edited in Journals:

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