Curriculum Vitae

Personal

Name	Anastasios G. Tongas
Address	Department of Mathematics, University of Patras
	265 04, Patras, Greece
e-mail	tasos@math.upatras.gr
http	Anastasios G. Tongas home page
Telephone	+30 2610 996757

Education

2001 PhD, University of Patras, Department of Mathematics, Advisor: Dimitri Tsoubelis.

1991 B.Sc in Mathematics, University of Patras, Department of Mathematics

Employment History

2014-pres. Lecturer, Department of Mathematics, University of Patras.

2011-2013 Visiting Assistant Professor, Dept. of Mathematics and Statistics, Un. of Cyprus.

2008-2010 Visiting Assistant Professor, Dept of Applied Mathematics and Mathematics, Un. of Crete.

2004-2007 Postdoctoral Fellow, Dept. of Mathematics, Un. of Patras.

2002-2004 Marie Curie Fellow, postdoctoral Fellow, Un. of Leeds, UK, Dept. of Applied Mathematics.

Fellowships

2009 Invited Research Fellow, *Isaac Newton Institute for Mathematical Sciences, Cambridge,* for the research programme Discrete Integrable Systems.

2002–2004 Marie Curie individual postdoctoral Fellowship, Department of Applied Mathematics, University of Leeds, UK.

1992–1997 Post-graduate fellowship (EMY), Section of Applied Analysis, Dept of Mathematics Un. of Patras.

1995 Erasmus Fellow, Dept. of Applied Mathematics, University of Leeds, UK.

Research - Teaching Experience

2014-pres. Lecturer, Department of Mathematics University of Patras.
Currently I teach the undergraduate courses: "Ordinary Differential Equations I", "Advanced Mathematics with Computer Algebra Systems", and the postgraduate course "Nonlinear Wave Equations" at Dept. of Mathematics.
Previous teaching: "Partial Differential Equations", "Theory of Special Relativity", "Fourier Transform, distributions and applications", "Mathematical Physics".
Service courses: "Mathematics" and "Mathematics II" at the Dept. of Biology and Geology, respectively.

2011 - 2013 Visiting Assistant Professor, Dept. of Mathematics and Statistics, Un. of Cyprus.
I taught the undergraduate service courses "Calculus I" and "Calculus II", "Mathematics I" and "Mathematics II", "Introduction to Probability and Statistics", "Ordinary Differential Equations", "Mathematics with symbolic computation programmes".

2008 - 2010 Visiting Assistant Professor, Dept of Applied Mathematics and Mathematics, Un. of Crete.
I taught the undergraduate courses, "Methods of Applied Mathematics I", "Algebra", "Linear Algebra II", "Applied Algebra".

2004 - 2007 Postdoctoral Fellow, Dept. of Mathematics, Un. of Patras.
I worked for the research programme Pythagoras I, No. B-365-015, ΕΠΕΑΕΚ ΙΙ. with title "Generating Equations of Integrable Systems and Reductions."

2002 - 2004 Marie Curie Postdoctoral Fellow, Dept. of Applied Mathematics, Univ. of Leeds, UK,
I worked for the research programme with Contract No HPMF-CT-2002-01639, funded by the individual postdoctoral fellowships *Marie Curie.*
Tutor for the undergraduate courses "Calculus, ordinary differential equations and functions of several variables" and "Applications of Mathematics".

1996–2001 Post-graduate researcher Dept. of Mathematics Un. of Patras, funded by GGET ΠΕ-ΝΕΔ95, No. 1328 and the research programme of Un. of Patras "Carathéodory", No. 1938.

Thesis Supervision

a) *"The method of Inverse Scattering for the Nonlinear Schrödinger Equation and Extreme Wave Phenomena"*, by Constantina Constanti, Master's Thesis, Dept. of Mathematics, Un. of Patras, (September 2018).

b) *Introduction to the Geometry of Black Holes*, by Constantinos Dimitriou, Bachelor's dissertation, Dept. of Mathematics, Un. of Patras, (June 2018). http://hdl.handle.net/10889/11667.

Conferences-Workshops Organization

I am one of the organizers of the series of Workshops "Mathematical Physics-Integrable Systems" mpis14, mpis16, and mpis17) held at Patra.
Member of the organizing Commity for NEB 6, and the 6th Conference "Group Analysis of Differential Equations", June 17–21, 2012 (Protaras, Cyprus).

Computer Skills

Computer Algebra Systems: SageMath, Mathematica, Maple, Matlab, Reduce.
Languages: Python, HTML, LaTeX.
Operating Systems: Unix (Apollo HP), Linux.

Publications

Peer-Reviewed

A 1 A. Tongas, D. Tsoubelis and P. Xenitidis, Integrability aspects of a Schwarzian PDE. *Phys. Lett. A.* **284**, 266-274, (2001).

A 2 A. Tongas, D. Tsoubelis and P. Xenitidis, A family of integrable nonlinear equations of hyperbolic type. *J. Math. Phys.* **42**, 5762-5784, (2001).

A 3 A. Tongas and F. Nijhoff, Generalized hyperbolic Ernst equations for an Einstein–Maxwell–Weyl field. *J. Phys. A: Math. Gen.* **38**, 895-906, (2005).

A 4 A. Tongas and F. Nijhoff, The Boussinesq integrable system: Compatible lattice and continuum structures. *Glasgow Math. J.* **47A**, 205–219, (2005).

A 5 A. Tongas and F. Nijhoff, A discrete Garnier type system from symmetry reduction on the lattice. *J. Phys. A: Math. Gen.* **39**, 12191–12202, (2006).

A 6 V. G. Papageorgiou, A. G. Tongas and A. P. Veselov, Yang-Baxter maps and symmetries of integrable equations on quad-graphs. *J. Math. Phys.* **47**, 083502, (2006).

A 7 V. G. Papageorgiou and A. G. Tongas. Yang-Baxter maps and multi–field integrable lattice equations. *J. Phys. A: Math. Theor.* **40**, 12677-12690, (2007).

A 8 A. Tongas, D. Tsoubelis and P. Xenitidis. Affine linear and D_4 symmetric lattice equations: Symmetry analysis and reductions. *J. Phys. A: Math. Theor.* **40**, 13353-13384, (2007).

A 9 V.G. Papageorgiou, Yu.B. Suris, A.G. Tongas and A.P. Veselov, On quadrirational Yang-Baxter maps, *SIGMA* **6**, 033, 9 pages (2010).

In Conference Proceedings with referees

B 1 A. Tongas, D. Tsoubelis and V. Papageorgiou, Symmetries and group invariant reductions of integrable partial difference equations, N. H. Ibragimov, C. Sophocleous and P. A. Damianou eds, Proceedings of the 10th International Conference in Modern Group Analysis (Larnaca, 2004), pp. 222-230.

B 2 A. Tongas, On the symmetries of integrable partial difference equations. Proceedings of the International Conference on Difference Equations, Special Functions and Orthogonal Polynomials, Munich, July 2005, S Elaydi, J Cushing, R, Lasser, V Papageorgiou, A Ruffing and W Van Assche eds, World Scientific 2007, pp. 654–663.

Hellenic Conferences with international participation

B 3 A. Tongas, Geometrical Aspects of an Integrable Nonlinear Equation of the Schwarzian Type. K. Kokkotas and N. Stergioulas eds, Proceedings of the 10th Hellenic Relativity conference "Recent Developments in Gravity", Kalithea, Chalkidiki, May 2002, World Scientific 2003 pp. 150–154.

B 4 A. Tongas, Generalized Ernst equations for plane symmetric space-times and compatible lattice structures, 11th Conference on Recent Developments in Gravity 2-5 June 2004, Lesbos, Greece, *Journal of Physics: Conference Series*, vol. **8**, 2005.

Preprints

Γ 1 V. G. Papageorgiou and A. G. Tongas, Yang-Baxter maps associated to elliptic curves, `arXiv:0906.3258`. Preprint of the Isaac Newton Institute.

Miscellaneous manuscripts

a) Lecture Notes on Advanced Mathematics with Computer Algebra Systems (SageMath) (192 pages). html documentation of the course

b) Lecture Notes on Ordinary Differential Equations (91 pages).

c) Lecture Notes on Generalized Functions and Green Functions (41 pages).

d) Lecture Notes on Special theory of Relativity (20 pages).

e) Lecture Notes on Calculus and Ordinary Differential Equations for Biology (135 pages).

f) Doctoral thesis, "Symmetries and Integrability of nonlinear Partial Differential Equations and applications to General Relativity." (210 pages.)

Talks, participation in scientific conferences and workshops

International Conferences

1. Invited talk: *Yang-Baxter maps associated to integrable lattice equations.* International conference Nonlinear Evolution Equations and Dynamical Systems (NEEDS), Isola Rossa, Italy, 16-23 May, 2009.

2. Invited talk: *Symmetries and reductions of integrable discrete equations on quad-graphs.* 8th International Conference on Symmetries and Integrability of Difference Equations (SIDE8), Centre de Recherches Mathématiques (CRM), Montreal, 22-28 June, 2008.

3. Contributed talk: *Symmetry reductions of integrable equations on quad-graphs and discrete Painlevé equations.* International Conference on " The Painlevé Equations and Monodromy Problems ", Isaac Newton Institute for Mathematical Sciences, Cambridge, 11-22 September 2006.

4. Contributed talk: *Yang-Baxter maps, symmetries and reductions of integrable equations on quad-graphs.* International conference SIDE VII Symmetries and Integrability of Difference Equations, Melbourne, 10-14 July 2006.

5. Contributed talk: *On the symmetries of integrable partial difference equations.* International Conference on Difference Equations, Special Functions and Applications, Munich, 25-30 July 2005.

6. Contributed talk: *Symmetries and group invariant reductions of integrable partial difference equations*, 10th International conference in Modern group analysis, Larnaca, October 2004.

7. Poster presentation *Symmetries and Integrability of Difference Equations* (SIDE) VI, Helsinki, Finland, June 2004, EURESCO conference.

8. Contributed talk: *Integrable hierarchies of soliton equations I. Generalized Ernst equations for colliding plane spacetimes*, International Conference ISLAND 2: Discrete Systems and Geometry, Isle of Arran, June 2003.

9. Conference participation SIDE V, Giens, June 2002, EURESCO conference.

10. Invited Research Fellow for two months participation to the Scientific Programme *Discrete Integrable Systems*, at Isaac Newton Institute for Mathematical Sciences, 19 January - 3 July 2009, Cambridge.

Workshops, invited talks

1. Talk with title: *Tetrahedron and boundary maps from integrable lattice equations.* Ninth Workshop "Group Analysis of Differential Equations and Integrable Systems", June 10–14, 2018 (Larnaca, Cyprus).

2. Talk with title: *Functional tetrahedron maps and symmetries of integrable discrete equations of octahedron type*, Eighth Workshop "Group Analysis of Differential Equations and Integrable Systems", June 12–17, 2016 (Larnaca, Cyprus).

3. Talk with title: *Yang-Baxter maps associated to integrable lattice equations,* 4 February 2009, Scientific Programme Discrete Integrable Systems, Isaac Newton Institute for Mathematical Sciences, Cambridge, 19 January - 3 July 2009.

4. Talk with title: *Yang-Baxter maps from integrable equations on quad-graphs and symmetry reductions to discrete Painlevé equations.* University of Leeds, Integrable Systems Seminar Series, 9 December, 2005.

5. Talk with title: *Integrable hierarchies of soliton equations and their emergence into Einstein's General Relativity*, Applied Mathematics Seminar, Department of Applied Mathematics, University of Leeds, UK, 20 October 2003.

6. Talk with title: *Integrability and geometrical aspects of the generalized Ernst equation*, Mathematics Seminar, Institute of Mathematics, Statistics and Actuarial Science, University of Kent, UK, 17 February 2003.

7. Talk with title: *Integrability of the generalized Ernst equations and the hierarchies of soliton equations*, LMS workshop on Integrable Systems. Department of Mathematics and Statistics, University of York, UK, 18 July 2003.

8. Talk with title: *Anti-self-dual metrics from solutions of the generalized Ernst equation*, LMS workshop on Integrable Systems, Department of Mathematics, University of Hull, UK, 24 January 2003.

9. Talk with title: *Generating PDE's as reductions of ASDYM and the generalized Ernst equation*, LMS workshop on Integrable Systems , Mathematical Institute, University of Oxford, UK, 19 November 2002.

Talks in Hellenic Conferences - Summer Schools

1. Two lectures to the 5th Summer School in Mathematics, 14-24 July 2008, at Heracklion Crete, on "The Symmetries of Sophus Lie and applications to equations of Mathematical Physics".

2. Participation with contributed talks to the 10th and 11th Conference on "New Developments on Gravity (NEB)", as they are referred in publications [B3] and [B4].

3. Participation to NEB 8 (Karlovasi, Samos 1998), NEB 7 (Athens 1996), NEB 4 (Patras 1994).

Referee in scientific journals

Physics Letters A, Journal of Physics A: Mathematical and Theoretical,

Classical and Quantum Gravity, Journal of Nonlinear Mathematical Physics

Symmetry, Integrability and Geometry: Methods and Applications (SIGMA)

Applicable Analysis, Physica Scripta, Journal of Mathematical Physics

Scientific Profile in bibliographical and citation indexing databases

Google Scholar, AMS MathSciNet , Web of Science

Miscellaneous Services

Obligatory military services for 21 months (March 1998–December 1999) at the Hellenic Navy.