JOHN MIRITZIS

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EDUCATION

1978 University of Athens (B.Sc in Physics)

1996 University of Natal (M.Sc in Applied Mathematics)

1997 University of the Aegean (PhD)

RESEARCH INTERESTS

Applications of Dynamical Systems in Mathematical Cosmology and Population Dynamics, Mathematical Cosmology, Higher-order Gravity Theories.

JOURNAL PUBLICATIONS

1. J. Miritzis and S. Cotsakis (1996), Non-linear Lagrangians and the isotropy of the Universe, *Physics Letters* **B 383**, 377-382.

2. S. Cotsakis and J. Miritzis (1998), Proof of the cosmic no-hair conjecture for some quadratic homogeneous cosmologies, *Classical and Quantum Gravity* **15**, 2795-2801. arXiv:gr-qc/9712026v1

3. S. Cotsakis, J. Miritzis and L. Querella (1999), Variational and conformal structure of nonlinear metric-connection gravitational Lagrangians, *Journal of Mathematical Physics* **40**, 3063-3071. arXiv:gr-qc/9712025v2

4. J. Miritzis, P.G.L. Leach and S. Cotsakis (2000), Symmetry, singularities and integrability in complex dynamics IV: Painlevé integrability of isotropic cosmologies, *Gravitation & Cosmology* **6**, 282-290. arXiv:gr-qc/0011019v1

5. P.G.L. Leach, S. Cotsakis and J. Miritzis (2001), Symmetry, singularities and integrability in complex dynamics VI: Integrability Properties of FRW-Scalar Cosmologies, *Gravitation & Cosmology* **7**, 311-320. arXiv:gr-qc/0107038v1

6. J. Miritzis (2003), Scalar-field cosmologies with an arbitrary potential, *Classical and Quantum Gravity* **20**, 2981-2990. arXiv:gr-qc/0303014v1

7. J. Miritzis (2003), Dynamical system approach to FRW models in higher-order gravity theories, *Journal of Mathematical Physics* **44**, 3900-3910. arXiv:gr-qc/0305062v1

8. P.G.L. Leach and J. Miritzis (2004), Competing Species, Integrability and Stability, *Journal of Nonlinear Mathematical Physics* **11** Number 1, 123-133. arXiv:q-bio/0609010v1

9. J. Miritzis (2004), Isotropic cosmologies in Weyl spacetimes, *Classical and Quantum Gravity* **21**, 3043-3055. arXiv:gr-qc/0402039v1

10. J. Miritzis (2005), The recollapse problem of closed Friedmann–Robertson–Walker models in higher-order gravity theories, *Journal of Mathematical Physics* **46**, 082502 - 082513. arXiv:gr-qc/0505139v1

11. P.G.L. Leach and J. Miritzis (2006), Analytic behaviour of Competition among Three Species, *Journal of Nonlinear Mathematical Physics* **13** Number 4, 535-548. arXiv:q-bio/0609010

12. J. Miritzis (2009), Oscillatory behaviour of closed isotropic models in second order gravity theory, *General Relativity and Gravitation* **41**, 49-65. Published online: http://www.springerlink.com/content/e670745071001372/ arXiv:0708.1396

13. J. Miritzis (2009), Comment on "Existence of Einstein static universes and their stability in fourth-order theories of gravity", *Physical Review* D **79**, 06850179. arXiv:0902.3522

14. R. Giambò and J. Miritzis (2010), Energy exchange for homogeneous and isotropic universes with a scalar field coupled to matter, *Classical and Quantum Gravity* **27**, 095003 (15pp). arXiv:0908.3452

15. A. Tamvakis, J. Miritzis, G. Tsirtsis, A. Spyropoulou and S. Spatharis (2012), Effects of meteorological forcing on coastal eutrophication: Modeling with model trees, *Estuarine Coastal and Shelf Science*, **115**, SI 210-217, DOI: 10.1016/j.ecss.2012.09.003.

16. J. Miritzis (2013), Acceleration in Weyl integrable spacetime, *International Journal of Modern Physics* D **22**, No. 5, 1350019 (7 pp), DOI: 10.1142/S0218271813500193.

17. A. Tamvakis, V. Trygonis, J. Miritzis, G. Tsirtsis and S. Spatharis, (2014), Optimizing biodiversity prediction from abiotic parameters, Environmental Modelling & Software, 53, 112-120, doi.org/10.1016/j.envsoft.2013.12.001

18. K. Tzanni and J. Miritzis, (2014), Coupled quintessence with double exponential potentials, Physical Review D 89, 103540 (9 pp), DOI: 10.1103/PhysRevD.89.103540

19. R. Giambò, J. Miritzis and K. Tzanni, (2015), Negative potentials and collapsing universes, Classical and Quantum Gravity 32, 035009 (9 pp), DOI:10.1088/0264-9381/32/3/035009

20. R. Giambò, J. Miritzis and K. Tzanni, (2015), Negative potentials and collapsing universes II, Classical and Quantum Gravity 32 165017 (12 pp), DOI: 10.1088/0264-9381/32/16/165017

21. J. Miritzis, (2017), Comment on "Cyclic universe with an inflationary phase from a cosmological model with real gas quintessence", *Physical Review D* **95**, 128301 (2pp), DOI: https://doi.org/10.1103/PhysRevD.95.128301

22. S. Cotsakis, J. Miritzis and K. Tzanni, (2019), Cosmological wave maps, *International Journal of Modern Physics A*, Vol. **34**, No. 17 (2019) 1950092 (13 pages), DOI: 10.1142/S0217751X19500921

23. R. Giambo, J. Miritzis and A. Pezzola, (2020), Late time evolution of negatively curved FLRW models, *The European Physical Journal Plus*, **135**, Article number: 367, DOI: 10.1140/epjp/s13360-020-00370-3

CONFERENCE PUBLICATIONS

1. Algebraic Integrability of Isotropic Cosmologies (with S. Cotsakis), in Proceedings of the IX Marcel Grossmann Meeting, On Recent Developments in Theoretical and Experimental General Relativity, Gravitation and Relativistic Field Theories, Rome 2000, V. Gurzadyan, R. T. Jantzen, R. Ruffini (eds), World Scientific pp 1943-1944, 2002.

2. Scalar-tensor σ-cosmologies (with S. Cotsakis), in Proceedings of the IX Marcel Grossmann Meeting, On Recent Developments in Theoretical and Experimental General Relativity, Gravitation and Relativistic Field Theories, Rome 2000, V. Gurzadyan, R. T. Jantzen, R. Ruffini (eds), World Scientific pp 1945-1946, 2002.

3. A note on Wavemap-tensor cosmologies (with S. Cotsakis), in Modern Theoretical and Observational Cosmology, pp 67-73, S. Cotsakis and M. Plionis (eds), Kluwer 2002, Αθήνα 2001.

4. Dynamical system approach to FRW cosmological models, in Proceedings of the 10th NEB, Conference on Recent Developments in Gravity, Χαλκιδική, 2002. K. Kokkotas and N. Stergioulas (eds), World Scientific pp 103-107, 2003.

5. Can Weyl geometry explain acceleration? in Proceedings of the 11th NEB, Conference on Recent Developments in Gravity, Mytilene, Greece, 2004, S. Cotsakis and J. Miritzis (eds), Journal of Physics: Conference Series 8, 131-144, 2005.

6. Can a closed universe in $R+\alpha R^2$ theory avoid recollapse? in Proceedings of the "Albert Einstein's century" International conference, 18-22 July 2005, Paris, J. M. Alimi and A. Füzfa (eds), American Institute of Physics Conference Proceedings 861, 981-986, 2006, DOI: 10.1063/1.2399687.

7. Singularities of varying light-speed models, (with S. Cotsakis), in Proceedings of the 12th NEB, Conference on Recent developments in Gravity, June 29-July 2, 2006, Nauplia, Greece, Journal of Physics: Conference Series 68, 012019 (7pp), 2007, DOI: 10.1088/1742-6596/68/1/012019.

8. The recollapse problem of closed isotropic models in second order gravity theory, in Proceedings of the XI Marcel Grossmann Meeting, On Recent Developments in Theoretical and Experimental General Relativity, Gravitation and Relativistic Field Theories, Berlin 2006, V. Gurzadyan, R. T. Jantzen, R. Ruffini (eds), World Scientific, pp 2048-2050, 2007.

9. Homogeneous and Isotropic Cosmologies in Higher Order Gravity in Proceedings of the 13th NEB Conference on Recent Developments in Gravity, 4-6 June 2008, Thessaloniki, Greece, Journal of Physics: Conference Series 189, 0122009 (10pp), 2009, DOI: 10.1088/1742-6596/189/1/012025.

10. Expanding universes in the conformal frame of f(R) gravity (with R. Giambò), in Proceedings of the Conference The Invisible Universe, 29 June-3 July 2009, Paris, J. M. Alimi and A. Füzfa (eds), American Institute of Physics Conference Proceedings 1241, 1061-1065, 2010, DOI: 10.1063/1.3462600.

11. Late Time Behaviour of Closed Isotropic Models in Second Order Gravity Theory, in Proceedings of the XII Marcel Grossmann Meeting on General Relativity, Gravitation and Relativistic Field Theories, Paris 2009, T. Damour, R. T. Jantzen, R. Ruffini (eds), World Scientific, 1805-1807, 2012.

12. FRW models in the conformal frame of f(R) gravity, in Proceedings of the 14th NEB Conference on Recent Developments in Gravity, 8-11 June 2010, Ioannina, Greece, Journal of Physics: Conference Series 283, 012024 (6pp), 2011, DOI: 10.1088/1742-6596/283/1/012024.

13. Acceleration in Weyl geometry, in Proceedings of the 15th NEB Conference on Recent Developments in Gravity, 20-23 June 2012, Chania, Greece, Journal of Physics: Conference Series 453, 012006 (7pp), 2013, DOI:10.1088/1742-6596/453/1/012006

14. Can second order gravity theory explain acceleration? in Proceedings of the XIII Marcel Grossmann Meeting on General Relativity, Gravitation and Relativistic Field Theories, Stockholm 1-7 July 2012, K. Rosquist, R. T. Jantzen, R. Ruffini (eds), World Scientific.