

# Thomas Sotiriou

# Curriculum Vitae

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**Date of Birth:** 2/4/1979 (d/m/y)  
**email:** Thomas.Sotiriou@nottingham.ac.uk  
**Spoken Languages:** Greek (mother tongue), English (fluent), Italian (fair)

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Last updated: November 10, 2020

## Current Roles

*Professor of Gravitational Physics* School of Mathematical Sciences & School of Physics and Astronomy,  
University of Nottingham, UK  
*Director of Research* School of Mathematical Sciences, University of Nottingham, UK  
*Working Group Leader* EU COST Action "Gravitational Waves, Black Holes and Fundamental Physics"  
(140+ members from 25 countries/4 continents)  
*Chair* Gravitational Physics Group, Institute of Physics

## Previous Positions

**May 2018 - Sep 2018:** Distinguished Visiting Professor, Instituto Superior Tecnico, Lisbon, Portugal  
**June 2016 - Aug 2016:** Visiting Researcher, Perimeter Institute, Canada  
**March 2015 - May 2015:** Visiting Researcher, Perimeter Institute, Canada  
**Oct 2013 - Jul 2017:** Associate Professor & Reader, School of Mathematical Sciences  
& School of Physics and Astronomy, University of Nottingham, UK  
**May 2011 - Sep 2013:** Assistant Professor, SISSA, Trieste, Italy  
**Jul 2010 - Apr 2011:** Marie Curie Fellow, DAMTP, University of Cambridge, UK  
**May 2009 - Jun 2010:** Postdoctoral Research Associate, DAMTP, University of Cambridge, UK  
**Nov 2007 - Apr 2009:** Postdoctoral Research Associate, Gravitation Theory Group,  
University of Maryland, College Park, USA

## Awards and Grants

STFC Consolidated Grant (co-I), 2020 - 2023, £914,540  
STFC Consolidated Grant (co-I), 2017 - 2020, £870,178  
COST Action "Gravitational Waves, Black Holes and Fundamental Physics, Working Group Leader, 2017  
European Research Council Starting Grant, 2012 - 2018, 1,375,226 Euro  
Visiting Researcher, Perimeter Institute, Canada, 2015 and 2016  
FQXi mini-grants 2010, 2012, 2014, \$ 14,000  
Marie Curie Career Integration Grant, 2012 - 2016, 100,000 Euro  
SISSA Young Scientist grant, 2011-2012, 10,000 Euro  
Marie Curie Incoming International Fellowship, 2010 - 2012, 171,241 Euro  
Nottingham Advanced Research Fellowship 2010 (declined)  
SISSA fellowship for PhD studies, 2004 - 2007

## Education

PhD in Astroparticle Physics, SISSA, Trieste, 2007

MSc by Research in Astrophysics, Astronomy and Mechanics, University of Athens, 2004

Degree in Physics, University of Athens, 2002

## Mentoring

### Postdocs:

Ian Vega, Oct 2012 - Sep 2015 (Associate Professor, NIP, Philippines)

Shuang-Yong Zhou, Oct 2012 - Sep 2014 (Professor, USTC, China)

Georgios Pappas, Apr 2013 - Mar 2015 (Assistant Professor, AUTH, Greece)

Emir Gumrukcuoglu, Oct 2013 - Sep 2015 (Dennis Sciama Fellow, ICG, Portsmouth, UK)

Lisa Glaser, Sep 2014 - Aug 2016 (Lise Meitner Fellow, U. of Vienna, Austria)

Helvi Witek, Aug 2015 - Oct 2016 (Assistant Professor, UIUC, USA)

Michael Horbatsch, Sep 2014 - Aug 2016 (start-up in California, USA)

Jishnu Bhattacharyya, Sep 2013 - Jul 2017

Mehdi Saravani,<sup>1</sup> Mar 2016 - Feb 2019 (Goldman-Sachs, UK)

Antoine Lehebel, Oct 2018 - Sep 2020 (IST, Lisbon, Portugal)

Lorenzo Brodin, Oct 2018 - Sep 2020 (Data Scientist as AISent, Italy)

Ryan McManus, Oct 2020 - to date

### PhD Students:

Daniele Vernieri, Aug 2012 - Oct 2014 (Assistant Professor, U. of Naples, Italy)

Noemi Frusciante, Aug 2012 - Oct 2014 (Postdoc at University of Lisbon)

Mattia Colombo, Oct 2013 - Oct 2016 (Software Engineer, Boots UK)

Andrew Coates, Oct 2014 - Oct 2017 (Postdoc at Koc University, Turkey)

Robert Benkel, Sep 2015 - Feb 2019 (Postdoc at AEI Potsdam)

Nicola Franchini, Sep 2016 - Sep 2019 (Postdoc at SISSA, Trieste)

Giulia Ventagli, Sep 2018 - to date

Nikolaos Andreou, Sep 2018 - to date

Georgios Antoniou, Sep 2019 - to date

## Teaching Experience

"Black holes", MATH4016, 2019-2020, 2020-2021, University of Nottingham.

*Fourth year Maths/Physics Students and MSc in Gravity, Particles and Fields course.*

"Mathematics for Physics & Astronomy", HG1MPA, 2014-2015, 2017-2018, 2018-2019, University of Nottingham.

*First year course for Physics students, partially redesigned in 2018.*

"Introduction to General Relativity" ,, 2010-2014 (4 academic years), SISSA, Trieste.

*Course for PhD students of 2 different PhD programmes, Astroparticle Physics and Astrophysics; entirely redesigned, with new notes, extra material and novel coursework and assessment material.*

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<sup>1</sup>Royal Exhibition of 1851 Fellowship, 2016-2019, £117,000

Supervisor at laboratory courses Physics I & IV, 2002-2003 and 2003-2004, University of Athens.

(Reduced teaching load in 2012-17 on account of my ERC grant and currently as Director of Research.)

## University Service

Nov 2020 - July 2023: Senate Member

Feb 2020 - to date: Member, Global Challenges Collaboration Fund Panel

June 2018 - to date: Member, International Collaboration Fund Panel

Aug 2018 - to date: As Director of Research for the School of Mathematical Sciences: Chair of Research Board, Member of Executive Board, Member of Promotions Committee, Chair of PGR & PDRA Liaison Forum, Member of Faculty of Science Research Committee

Oct 2018 - to date: Faculty of Science representative, Flexible Investment Framework Panel (University's strategic investment fund)

Jan 2018 - Aug 2018: Course Director, Mathematical Physics MSci, School of Mathematical Sciences, University of Nottingham

## Memberships

3rd Generation (3G) Gravitational Wave Detector Consortium, Science Case Team, Fundamental Physics Subgroup Chair (2018)

Laser Interferometer Space Antenna (LISA) consortium, Member (2018)

Institute of Physics (IOP), Member (2016)

Hellenic Society on Relativity, Gravitation, and Cosmology (HSRGC), Founding Member (2010)

## Commissions of Trust

*National and International committees/panels:*

Topical Team Member, European Space Agency (ESA) Voyage 2050 program (the 5 Topical Teams evaluate white papers and prepare report that will help determine ESA's scientific priorities to 2035-2050).

STFC Gravitational Wave Panel 2020-2023.

Stephen Hawking Fellowship Panel 2020-2023.

*Grant reviewer:*

EPSRC (UK), STFC (UK), NSERC (Canada), NRF (South Africa), FONDECYT (Chile), the Israel Science Foundation, Swiss National Science Foundation, Czech Science Foundation, Cariparo Foundation (Italy).

*Senior appointment committees as external:*

Full Professorship at University of Athens, Greece, 2020

Associate Professorship at IST, Lisbon, 2017

*Journal refereeing:*

Physical Review Letters, Physical Review D, Scientific Reports (Nature), Classical and Quantum Gravity, Physics Letters B, Journal of High Energy Physics (JHEP), Journal of Cosmology and Astroparticle Physics (JCAP), Journal of Mathematical Physics, General Relativity and Gravitation, European Physical Journal

C, Europhysics Letters, International Journal of Modern Physics D, Annalen der Physik, Proceedings of the Royal Society A, Modern Physics Letters A, Foundations of Physics, Symmetry, Astronomy and Astrophysics, Astrophysics and Space Science, Entropy, Dark Side of the Universe

*PhD External Examiner:*

External Examiner for Jaakko Vainio, University of Turku, Finland, Oct 2016.

PhD title: "On methods for constraining  $f(R)$  theories of gravity"

External Examiner for Ifra Noureen, Lahore University of Management and Technology, Pakistan, Jul 2016.

PhD title: "Dynamical analysis of compact objects in  $f(R)$  and  $f(R, T)$  theories"

External examiner for Marta Colleoni, University of Southampton, Jun 2016.

PhD title: "Gravitational self-force and the weak Cosmic Censorship"

External examiner for Bethan Cropp, SISSA, Sep 2015.

PhD title: "Strange horizons: understanding causal barriers beyond General Relativity"

External examiner for Ermis Mitsou, University of Geneva, Feb 2015.

PhD title: "Aspects of infrared non-local modifications of General Relativity"

External examiner for Jan Schröder, University of Sussex, Mar 2015.

PhD title: "Aspects of Quantum Gravity and Matter"

*Participation in PhD extended exam committees not listed.*

## Other Professional Service

*Learned Societies:*

*Chair* (2017 - ), Gravitational Physics Group, Institute of Physics (IoP)

*Secretary* (2016 - 2018), *Governing Board Member* (2014-2016), Hellenic Society on Relativity, Gravitation and Cosmology (HSRGC)

*Editorial Work:*

Associate Editor, General Relativity and Gravitation (2017 - )

Member of Editorial Board, Proceedings of the Royal Society A: Mathematical, Physical & Engineering Sciences

*Diversity and Equality:*

Athena SWAN panel member, 2017 round

## Conference and Workshop Organization

Coordinator, KITP Program "Probing Effective Theories of Gravity in Strong Fields and Cosmology" (GREFT20), KITP, Santa Barbara, Aug 2020 (remote due to covid19)

Scientific Committee, "Gravitational Waves, black holes, and fundamental physics" Conference, IFPU, Trieste, Jan 2020

Scientific Committee and Session Chair, 30th Texas Symposium on Relativistic Astrophysics, Portsmouth, Dec 2019

Session Chair, GR22 Conference, Valencia, July 2019

Scientific Committee, "Athens 2019: Gravitational Waves, black holes, and fundamental physics" Conference, Athens, Greece, Jan 2019

Organizing Committee Chair, "Test of Gravity" workshop, Athens, Greece, Jan 2019  
 Organizing Committee, NEB 18 "Recent Developments in Gravity" Conference, Rhodes, Greece, Sep 2018  
 Organizing Committee, "Neutron stars in the dawn of multi-messenger astronomy", London, UK, Sep 2018  
 Organizing Committee, Gravity Data Group Meeting, Oxford, Mar 2018  
 Scientific Committee, "Gravity@Malta" Conference, Valetta, Malta, Jan 2018  
 Organizing Committee, Ninth Aegean Summer School, Sifnos, Greece, Sep 2017  
 Organizing Committee, "Observing Black Holes: From the Universe to the lab", London, UK, Sep 2017  
 Organizing Committee, "Gravity and Experiment", Paris, France, Dec 2016  
 Organizing Committee, NEB 17 "Recent Developments in Gravity" Conference, Mykonos, Greece, Sep 2016  
 Organizing Committee, "Gravitational waves in modified gravity theories", NTUA, Athens, Greece, Sep 2016  
 Organizing Committee, BritGrav 2016, Nottingham, Apr 2016  
 Organizing Committee Chair, "Gravity at all scales", Nottingham, Aug 2015  
 Organizing Committee, "2nd Mediterranean Conference on Class. and Quant. Gravity", Veli Lošinj, Jun 2012  
 Organizing Committee, "Strong Gravity beyond GR: from theory to observations", IST, Lisbon, Mar 2012  
 Organizing Committee, "Kavli IPMU focus week on Gravity and Lorentz violations", IPMU, Tokyo, Feb 2012  
 Organizing Committee Chair, "Lorentz Violations and gravity theories", DAMTP, Cambridge, Oct 2011  
 Scientific Committee, "Beyond the Concordance Model", Stellenbosch, South Africa, Aug 2010

## Invited Conference and Workshop Presentations

Spanish-Portuguese Relativity Meeting, September 2020, Aveiro, Portugal. [cancelled due to covid19]  
 QG2020 (discussion session chair), July 2020, Perimeter Institute, Canada.  
 NEB 19 "Recent Developments in Gravity", July 2020, Athens, Greece. [cancelled due to covid19]  
 "Strong Gravity Beyond" workshop, June 2020, Sardinia, Italy. [cancelled due to covid19]  
 Voyage 2050 ESA workshop (as Topical Team Member), October 2019, Madrid, Spain.  
 "Precision Gravity" workshop, October 2019, Berlin-Brandenburg Academy of Sciences, Berlin, Germany.  
 Kavli RISE Summer School on Gravitational Waves, September 2019, DAMTP, Cambridge, UK  
 "Precision Gravity" workshop, September 2019, MIAPP, Munich, Germany  
 "Lost in Gravity" workshop, August 2019, Saint Flour, France  
 "From Einstein and Eddington to LIGO: 100 years of gravitational light deflection" workshop, May 2019, Sao Tome and Principe  
 GWADW2019, May 2019, Isola d'Elba, Italy.  
 PCCP/APC workshop, December 2018, Paris, France.  
 LISA Fundamental Physics Group meeting, November 2018, GGI, Florence, Italy.  
 Greek ERC Grantee Meeting, October 2018, FORTH, Crete, Greece.  
 General Relativity and Gravitational Editorial Board Meeting (invited talk), June 2018, Heidelberg, Germany.  
 Peyresq 2018 meeting, June 2018, Peyresq, France.  
 "Numerical Relativity Beyond GR" workshop, June 2018, Benasque, Spain.  
 "Gravity and Cosmology 2018" workshop, March 2018, Yukawa Institute, Kyoto, Japan.  
 "Gravity@Malta" Conference, January 2018, Valetta, Malta.  
 Ninth Aegean Summer School, September 2017, Sifnos, Greece.  
 "Strong Gravity Universe" workshop, July 2017, Sao Miguel Island, Portugal.  
 "New Frontiers in Gravitational Wave Astrophysics" workshop, June 2017, La Sapienza, Rome, Italy.  
 "The Physics of Extreme Stars" workshop, June 2017, Nordita, Stockholm, Sweden.  
 Irish Quantum Foundations 2017, May 2017, Dublin, Ireland.  
 StronG BaD workshop, March 2017, University of Mississippi, Oxford, MS, USA.

YETI2017, Jan 2017, Durham, UK.

"The Universe through gravitational waves" workshop, Dec 2016, Simon's Center for Geometry and Physics, New York, USA.

"Gravitational waves in modified gravity theories" workshop, Sep 2016, NTUA, Athens, Greece.

"Unifying test of GR" workshop, July 2016, Caltech, Pasadena, USA.

"QUARKS 2016" Conference, May 2016, Pushkin, Russia.

"Shapes of Gravity" Conference, April 2016, Nijmegen, The Netherlands.

"Gravitation and Scalar Fields" Workshop, October 2015, LUTH, Meudon, France.

"2nd Mini-Workshop on Gravity and Cosmology", October 2015, IAP, Paris, France.

"Probing the mystery: theory & experiment in quantum gravity" conference, August 2015, Galiano island, Canada.

"Compact stars and black holes" workshop, July 2015, Tuebingen, Germany.

"100 years of Strong Gravity" workshop, June 2015, IST, Lisbon, Portugal.

"Extended Theories of Gravity" workshop, March 2015, NORDITA, Stockholm, Sweden.

"Modern aspects of gravity and Cosmology" workshop, November 2014, LPT, Orsay, Paris, France.

NEB 16 "Recent Developments in Gravity", September 2014, Mykonos, Greece.

"Structure of Gravity and Spacetime" workshop, February 2014, Lady Margaret Hall, Oxford, UK.

"Seventh Aegean Summer School: Beyond Einstein Gravity", September 2013, Paros, Greece.

"V Challenges of New Physics in Space Workshop", April 2013, CBPF, Rio de Janeiro, Brazil.

"Kavli IPMU focus week on Gravity and Lorentz violations", February 2013, IPMU, Tokyo, Japan.

"V Black Holes Workshop", December 2012, Instituto Superior Tecnico, Lisbon, Portugal.

"Perspectives of Fundamental Cosmology" workshop, November 2012, NORDITA, Stockholm, Sweden.

"Workshop on holographic applications, out-of-equilibrium phenomena, gravity and analogue gravity", October 2012, Ecole Normale Supérieure, Paris, France.

RAGtime workshop, September 2012, Opava, Czech Republic.

"Effective gravity in fluids and superfluids" workshop, July 2012, ICTP, Trieste, Italy.

VIII International Workshop on the Dark side of the Universe, June 2012, Buzios, Brazil.

"Testing gravity with astrophysical and cosmological observations" conference, January 2012, IPMU, Japan.

Workshop on "Infrared Modifications of Gravity", September 2011, ICTP, Trieste, Italy.

"Beyond the Concordance Model" workshop, August 2010, Stellenbosch, South Africa.

Peyresq 2010 meeting, June 2010, Peyresq, France.

NEB XIV "Recent Developments in Gravity", June 2010, Ioannina, Greece.

"Emergent Gravity" Conference, August 2008, MIT, Cambridge, Massachusetts, USA.

## Invited Colloquia and Seminars

ICG, Portsmouth, March 12th 2020, Portsmouth, UK

University of Oslo, February 6th and 7th 2020 (seminar & colloquium), Oslo, Norway.

Johns Hopkins University, November 19th 2019, Baltimore, USA.

University of Illinois, November 13th 2019, Urbana-Champaign, USA

Instituto Superior Tecnico, June 21st 2018, Lisbon, Portugal

University of Lisbon, May 22nd 2018, Lisbon, Portugal

University of Heidelberg, May 2nd 2018, Heidelberg, Germany

Radboud University of Nijmegen, April 17th 2018, Nijmegen, The Netherlands

Montana State University, January 16th & 19th 2018 (seminar & colloquium), Bozeman, Montana, USA.

University of Tuebingen, December 12th 2017, Tuebingen, Germany.

Aristotle University of Thessaloniki, December 11th 2017, Thessaloniki, Greece.

University of Cambridge, October 27th 2017, Cambridge, UK.  
University of Sheffield, June 27th 2017, Sheffield, UK.  
Fudan University, April 21st 2017, Shanghai, China .  
Imperial College, March 15th 2017, London, UK.  
University of Oxford, November 15th 2016, Oxford, UK.  
SISSA, November 9th 2016, Trieste, Italy.  
Max Planck for Gravitational Physics (Albert Einstein Institute), May 18th 2016, Potsdam, Germany.  
University of Mississippi, March 22nd 2016, Oxford, MS, USA.  
Univeristy of Athens, February 16th 2016, Athens, Greece.  
“La Sapienza” University, January 25th 2016, Rome, Italy.  
SISSA - International School for Advanced Studies, December 15th 2015, Trieste, Italy.  
EPFL, December 4th 2015, Lausanne, Switzerland.  
Perimeter Institute, May 7th & 13th 2015, Waterloo, Ontario, Canada.  
University of Southampton, February 5th 2015, Southampton, UK.  
Perimeter Institute, May 5th 2014, Waterloo, Canada.  
King’s College London, March 21st 2014, London, UK.  
University of Sheffield, February 25h, 2014, Sheffield, UK.  
University of Cambridge, February 21st 2014, Cambridge, UK.  
University of Crete, March 12th 2013, Heraklion, Greece.  
CERN, February 6th 2013, Geneva, Switzerland.  
Institute for Cosmology and Gravitation, January 23rd 2013, Portsmouth, UK.  
University of Tuebingen, January 10th 2013, Tuebingen, Germany.  
University of Athens, June 18th 2012, Athens, Greece.  
INR, Russian Academy of Science, April 23rd 2012, Moscow, Russia.  
Texas A&M University, March 26th 2012, College Station, Texas, USA.  
Perimeter Institute, March 22nd 2012, Waterloo, Ontario, Canada.  
University of Guelph, March 19th 2012, Guelph, Ontario, Canada.  
University of Oxford, February 16th 2012, Oxford, UK.  
IPMU, February 1st 2012, Tokyo, Japan.  
CENTRA, November 18th 2011, Lisbon, Portugal.  
Syracuse University, September 19th 2011, Syracuse, New York, USA.  
Bishop’s University, September 13th 2011, Lennoxville, Quebec, Canada.  
Laboratoire de Physique Theorique d’Orsay, Université Paris-Sud 11, March 22nd 2011, Orsay, France.  
Victoria University of Wellington, February 17th 2011, Wellington, New Zealand.  
Laboratoire de Physique Theorique d’Orsay, Université Paris-Sud 11, March 24th 2010, Orsay, France.  
King’s College London, March 17th 2010, London, UK.  
Niels Bohr Institute, March 11th 2010, Copenhagen, Denmark.  
University of Cambridge, March 5th 2010, Cambridge, UK.  
SISSA - International School for Advanced Studies, February 9th 2010, Trieste, Italy.  
Academy of Athens, January 12th 2010, Athens, Greece.  
Institute for Cosmology and Gravitation, December 16th 2009, Portsmouth, UK.  
University of Sussex, December 7th 2009, Brighton, UK.  
University of Nottingham, November 20th 2009, Nottingham, UK.  
University of Crete, November 3rd 2009, Heraklion, Greece.  
University of Athens, October 29th 2009, Athens, Greece.  
Utrecht University, October 22nd 2009, Utrecht, The Netherlands.  
University of Oxford, October 7th 2009, Oxford, UK.  
SISSA - International School for Advanced Studies, July 16th 2009, Trieste, Italy.

University of Canterbury, February 13th 2009, Christchurch, New Zealand.  
 Victoria University of Wellington, February 2nd 2009, Wellington, New Zealand.  
 University College London, January 23rd 2009, London, UK.  
 SISSA - International School for Advanced Studies, June 20th 2008, Trieste, Italy.  
 University of Ioannina, May 30th 2008, Ioannina, Greece.  
 University of Maryland, April 10th 2008, College Park, Maryland, USA.  
 University of British Columbia, February 13th 2008, Vancouver, Canada.  
 National Technical University of Athens, October 3rd 2007, Athens, Greece.  
 Aristotle University of Thessaloniki, September 27th 2007, Thessaloniki, Greece.  
 Bishop's University, June 1st 2007, Lennoxville, Quebec, Canada.  
 University of Athens, June 9th 2005, Athens, Greece.

## Outreach

2018	Invited Lecture, Archimedean (U. of Cambridge Mathematical Society), November 16th, Cambridge
2018	Outreach Lecture, "Gravity at Malta" Conference, January 24th, Malta
2017	Invited Speaker, Pint of Science, May 15th, Nottingham, UK
2017	Invited contribution to CQG+, "Black holes without special relativity"
2017	Invited Speaker, Cafe Scientifique Nottingham, February 13th, Nottingham
2016	"100 Years of Black Holes" outreach event, Nottingham
2016	Invited "Science Public Lecture", May 19th, Nottingham
2016	"Gravitational Waves: a new window into the universe" outreach event, Nottingham
2015	"100 years of General Relativity" outreach event, Nottingham
2014	Interview and featured article at Plus Magazine
2012 and 2013	Panel member for the FQXi Essay competitions

### *Outreach training:*

Media Training, University of Nottingham "Research Leaders Programme", 2017  
 Royal Society Media & communications training, March 2016. Funded by an STFC bursary  
 Media training course for mathematicians, March 2016, School of Mathematical Science, University of Nottingham



## Publications

### Theses

1. PhD Thesis: **“Modified actions for Gravity: Theory and Phenomenology”**  
T. P. Sotiriou  
SISSA, International School for Advanced Studies, 2007 [arXiv:0710.4438 [gr-qc]]
2. Master Thesis: **“On the multipole moments of axisymmetric spacetimes”**  
T. P. Sotiriou  
University of Athens, 2004

### Papers in Refereed Journals

1. **“Numerical Black Hole Solutions in Modified Gravity Theories: Axial Symmetry Case”**  
A. Sullivan, N. Yunes and T. P. Sotiriou,  
preprint [arXiv:2009.10614 [gr-qc]].
2. **“Spin-induced scalarized black holes”**  
C. A. R. Herdeiro, E. Radu, H. O. Silva, T. P. Sotiriou and N. Yunes,  
preprint [arXiv:2009.03904 [gr-qc]].
3. **“Spin-induced black hole spontaneous scalarization”**  
A. Dima, E. Barausse, N. Franchini and T. P. Sotiriou,  
Phys. Rev. Lett. *accepted* [arXiv:2006.03095 [gr-qc]].
4. **“The onset of spontaneous scalarization in generalised scalar-tensor theories”**  
G. Ventagli, A. Lehebel and T. P. Sotiriou,  
Phys. Rev. D **102**, no.2, 024050 (2020) [arXiv:2006.01153 [gr-qc]].
5. **“Compact object scalarization with general relativity as a cosmic attractor”**  
G. Antoniou, L. Bordin and T. P. Sotiriou,  
preprint, [arXiv:2004.14985 [gr-qc]].
6. **“Detecting scalar fields with Extreme Mass Ratio Inspirals”**  
A. Maselli, N. Franchini, L. Gualtieri and T. P. Sotiriou,  
Phys. Rev. Lett. **125**, no.14, 141101 (2020) [arXiv:2004.11895 [gr-qc]].
7. **“Prospects for Fundamental Physics with LISA”**  
E. Barausse *et al.*,  
Gen. Rel. Grav. **52**, no.8, 81 (2020), arXiv:2001.09793 [gr-qc].
8. **“Probing the Nature of Black Holes: Deep in the mHz Gravitational-Wave Sky”**  
V. Baibhav *et al.*,  
preprint, arXiv:1908.11390 [astro-ph.HE].  
*White paper submitted to ESA’s Voyage 2050 on behalf of the LISA Consortium 2050 Task Force*
9. **“Spontaneous scalarization in generalised scalar-tensor theory”**  
N. Andreou, N. Franchini, G. Ventagli and T. P. Sotiriou,  
Phys. Rev. D **99** no 12, 124022 (2019) [arXiv:1904.06365 [gr-qc]].

10. **“Extreme Gravity and Fundamental Physics”**  
B. S. Sathyaprakash *et al.*  
preprint, arXiv:1903.09221 [astro-ph.HE].  
*Testing fundamental physics section of Third Generation Gravitational Wave Detector Science Case*
11. **“Self-interactions and Spontaneous Black Hole Scalarization”**  
C. F. B. Macedo, J. Sakstein, E. Berti, L. Gualtieri, H. O. Silva and T. P. Sotiriou  
Phys. Rev. D **99**, no. 10, 104041 (2019) [arXiv:1903.06784 [gr-qc]].
12. **“Cosmology with subdominant Horndeski scalar field”**  
N. Franchini and T. P. Sotiriou,  
Phys. Rev. D **101**, no.6, 064068 (2020), arXiv:1903.05427 [gr-qc].
13. **“Numerical black hole solutions in modified gravity theories: Spherical symmetry case”**  
A. Sullivan, N. Yunes and T. P. Sotiriou,  
Phys. Rev. D **101**, no.4, 044024 (2020), arXiv:1903.02624 [gr-qc].
14. **“Classification of shift-symmetric Horndeski theories and hairy black holes”**  
M. Saravani and T. P. Sotiriou,  
Phys. Rev. D **99**, no. 12, 124004 (2019) [arXiv:1903.02055 [gr-qc]].
15. **“Stability of scalarized black hole solutions in scalar-Gauss-Bonnet gravity”**  
H. O. Silva, C. F. B. Macedo, T. P. Sotiriou, L. Gualtieri, J. Sakstein and E. Berti,  
Phys. Rev. D **99**, no. 6, 064011 (2019) [arXiv:1812.05590 [gr-qc]].
16. **“Multipole moments and universal relations for scalarized neutron stars”**  
G. Pappas, D. D. Doneva, T. P. Sotiriou, S. S. Yazadjiev and K. D. Kokkotas,  
Phys. Rev. D **99**, no. 10, 104014 (2019) [arXiv:1812.01117 [gr-qc]].
17. **“Black holes and binary mergers in scalar Gauss-Bonnet gravity: scalar field dynamics”**  
H. Witek, L. Gualtieri, P. Pani and T. P. Sotiriou,  
Phys. Rev. D **99**, no. 6, 064035 (2019) [arXiv:1810.05177 [gr-qc]].
18. **“Causal structure of black holes in shift-symmetric Horndeski theories”**  
R. Benkel, N. Franchini, M. Saravani and T. P. Sotiriou,  
Phys. Rev. D **98**, no. 6, 064006 (2018) [arXiv:1806.08214 [gr-qc]].
19. **“Black holes, gravitational waves and fundamental physics: a roadmap”**  
L. Barack, V. Cardoso, S. Nissanke, T. P. Sotiriou, *et al.*,  
Class. Quant. Grav. **36**, no.14, 143001 (2019) [arXiv:1806.05195 [gr-qc]].  
*White paper for EU COST action “Gravitational Waves, Black Holes, and Fundamental Physics”*
20. **“Dynamical obstruction to perpetual motion from Lorentz-violating black holes”**  
R. Benkel, J. Bhattacharyya, J. Louko, D. Mattingly and T. P. Sotiriou,  
Phys. Rev. D **98**, no. 2, 024034 (2018) [arXiv:1803.01624 [gr-qc]].
21. **“Horava gravity after GW170817”**  
A. Emir Gumrukcuoglu, M. Saravani and T. P. Sotiriou,  
Phys. Rev. D **97**, no. 2, 024032 (2018) [arXiv:1711.08845 [gr-qc]].
22. **“Spontaneous scalarization of black holes and compact stars from a Gauss-Bonnet coupling”**  
H. O. Silva, J. Sakstein, L. Gualtieri, T. P. Sotiriou and E. Berti,  
Phys. Rev. Lett. **120**, no. 13, 131104 (2018) [arXiv:1711.02080 [gr-qc]].

23. **“Detecting Lorentz violations with gravitational waves from black hole binaries”**  
T. P. Sotiriou,  
Phys. Rev. Lett. **120**, no. 4, 041104 (2018) [arXiv:1709.00940 [gr-qc]].
24. **“Constructing Neutron Stars with a Gravitational Higgs Mechanism”**  
N. Franchini, A. Coates and T. P. Sotiriou,  
Phys. Rev. D **97**, no. 6, 064013 (2018) [arXiv:1708.02113 [gr-qc]].
25. **“Black hole horizons at the extremal limit in Lorentz-violating gravity”**  
N. Franchini, M. Saravani and T. Sotiriou,  
Phys. Rev. D **96**, no. 10, 104044 (2017) [arXiv:1707.09283 [gr-qc]].
26. **“Dynamical scalar hair formation around a Schwarzschild black hole”**  
R. Benkel, T. P. Sotiriou and H. Witek,  
Phys. Rev. D **94**, no. 12, 121503(R) (2016) [arXiv:1612.08184 [gr-qc]].
27. **“Revisiting the cuscuton as a Lorentz-violating gravity theory”**  
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30. **“Low energy ghosts and the Jeans’ instability”**  
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47. **“Matter around Kerr black holes in scalar-tensor theories: scalarization and super radiant instability”**  
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49. **“Slowly rotating black holes in Hořava-Lifshitz gravity”**  
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50. **“Surface singularities in Eddington-inspired Born-Infeld gravity”**  
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51. **“A no-go theorem for slowly rotating black holes in Hořava-Lifshitz gravity”**  
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52. **“Scale hierarchy in Horava-Lifshitz gravity: a strong constraint from synchrotron radiation in the Crab nebula”**  
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53. **“Dynamical apparent horizons in inhomogeneous Brans-Dicke universes”**  
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54. **“Hořava-Lifshitz gravity: detailed balance revisited”**  
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55. **“Black holes in scalar-tensor gravity”**  
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56. **“From dispersion relations to spectral dimension - and back again”**  
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57. **“Spectral dimension as a probe of the ultraviolet continuum regime of causal dynamical triangulations”**  
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58. **“Black holes in Einstein-aether and Hořava-Lifshitz gravity”**  
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59. **“Comment on: Detecting Vanishing Dimensions Via Primordial Gravitational Wave Astronomy”**  
T. P. Sotiriou, M. Visser and S. Weinfurtner  
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60. **“Lower-dimensions Hořava-Lifshitz gravity”**  
T. P. Sotiriou, M. Visser and S. Weinfurtner  
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61. **"Large-scale Structure in  $f(T)$  Gravity"**  
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62. **"Generalization of teleparallel gravity and local Lorentz symmetry"**  
T. P. Sotiriou, B. Li and J. D. Barrow  
Phys. Rev. D **83**, 104030 (2011) [arXiv:1012.4039 [gr-qc]]
63. **" $f(T)$  gravity and local Lorentz invariance"**  
B. Li, T. P. Sotiriou and J. D. Barrow  
Phys. Rev. D **83**, 064035 (2011) [arXiv:1010.3218 [gr-qc]]
64. **"The dynamics of metric-affine gravity"**  
V. Vitagliano, T. P. Sotiriou and S. Liberati  
Ann. Phys. **326**, 1259 (2011) [arXiv:1008.0171 [gr-qc]]
65. **"The dynamics of generalized Palatini theories of gravity"**  
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66. **"Gedanken experiments on nearly extremal black holes and the Third Law"**  
G. Chirco, S. Liberati and T. P. Sotiriou  
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67. **"Spinning Black Holes as Particle Accelerators"**  
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68. **"Strong coupling in extended Hořava–Lifshitz gravity"**  
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69. **"Over-spinning a black hole with a test body"**  
T. Jacobson and T. P. Sotiriou  
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70. **"Quantum gravity without Lorentz invariance"**  
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71. **"Phenomenologically viable Lorentz-violating quantum gravity"**  
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72. **" $f(R)$  gravity, torsion and non-metricity"**  
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74. **“Covariant Effective Action for Loop Quantum Cosmology from Order Reduction”**  
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75. **“ $f(R)$  Theories of Gravity”**  
T. P. Sotiriou and V. Faraoni  
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76. **“Modified gravity with  $R$ -matter couplings and (non-)geodesic motion”**  
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77. **“The viability of theories with matter coupled to the Ricci scalar”**  
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78. **“Perturbed Kerr Black Holes can probe deviations from General Relativity”**  
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79. **“Curvature singularities, tidal forces and the viability of Palatini  $f(R)$  gravity.”**  
E. Barausse, T. P. Sotiriou and J. C. Miller  
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80. **“Theory of gravitation theories: a no-progress report.”**  
T. P. Sotiriou, V. Faraoni and S. Liberati  
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*Invited paper in the Gravity Research Foundation 2007 special issue*
81. **“A no-go theorem for polytropic spheres in Palatini  $f(R)$  gravity.”**  
E. Barausse, T. P. Sotiriou and J. C. Miller  
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82. **“Reply to “Can gravitational dynamics be obtained by diffeomorphism invariance of action?””**  
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83. **“Post-Newtonian expansion for Gauss-Bonnet gravity.”**  
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84. **“Curvature scalar instability in  $f(R)$  gravity.”**  
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86. **“Metric-affine  $f(R)$  theories of gravity”**  
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87. **“Field equations from a surface term”**  
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88. **“Constraining  $f(R)$  gravity in the Palatini formalism”**  
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90. **“The nearly Newtonian regime in Non-Linear Theories of Gravity”**  
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91. **“Tracing the geometry around a massive, axisymmetric body to measure, through gravitational waves, its mass moments and electromagnetic moments”**  
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92. **“Corrections and Comments on the Multipole Moments of Axisymmetric Electrovacuum Spacetimes”**  
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93. **“Gravity and Scalar Fields”**  
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*Lecture given at the Seventh Aegean Summer School: Beyond Einstein Gravity, Paros, Greece, 23-28 Sep 2013*
94. **“Absence of scalar hair in scalar-tensor gravity”**  
V. Faraoni and T. P. Sotiriou  
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*Talk given (by V. F.) at the 13th Marcel Grossman Meeting, Stockholm, Sweden, 1-7 Jul 2012*
95. **“Apparent horizons in Clifton-Mota-Barrow inhomogeneous universe”**  
V. Vitagliano, V. Faraoni, T. P. Sotiriou and S. Liberati  
Proceedings of the Thirteenth Marcel Grossmann Meeting on General Relativity, in press [arXiv:1302.7150 [gr-qc]]  
*Talk given (by V. V.) at the 13th Marcel Grossman Meeting, Stockholm, Sweden, 1-7 Jul 2012*
96. **“Hořava-Lifshitz gravity with detailed balance”**  
D. Vernieri and T. P. Sotiriou



Proceedings of the Thirteenth Marcel Grossmann Meeting on General Relativity, in press [arXiv:1212.4402 [hep-th]]

*Talk given (by D. V.) at the 15th Conference on Recent Developments in Gravity (NEB XIV), Chania, Greece, 20-23 Jun 2010*

97. **“Hořava-Lifshitz gravity: a status report”**  
 T. P. Sotiriou  
 J. Phys. Conf. Ser. **283**, 012034 (2011) [arXiv:1010.3218 [hep-th]]  
*Talk given at the 13th Conference on Recent Developments in Gravity (NEB XIV), Ioannina, Greece, 8-11 Jun 2010*
98. **“Destroying black holes with test bodies”**  
 T. Jacobson and T. P. Sotiriou  
 J. Phys. Conf. Ser. **222**, 012041 (2010) [arXiv:1006.1764 [gr-qc]]  
*Based partially on a talk given (by T. P. S.) at the 1st Mediterranean Conference on Classical and Quantum Gravity, Kolymbari, Crete, Greece, 14-18 Sep 2010 and partially on an essay prepared for the “FQXi essay contest: What is Ultimately Possible in Physics?”*
99. **“Projectable Horava-Lifshitz gravity in a nutshell”**  
 S. Weinfurtner, T. P. Sotiriou and M. Visser  
 J. Phys. Conf. Ser. **222**, 012054 (2010) [arXiv:1002.0308 [gr-qc]]  
*Talk given (by S. W.) at the 1st Mediterranean Conference on Classical and Quantum Gravity, Kolymbari, Crete, Greece, 14-18 Sep 2010*
100. **“6+1 lessons from  $f(R)$  gravity”**  
 T. P. Sotiriou  
 J. Phys. Conf. Ser. **189**, 012039 (2009) [arXiv:0810.5594 [gr-qc]]  
*Talk given (by T. P. S.) at the 13th Conference on Recent Developments in Gravity (NEB XIII), Thessaloniki, Greece, 4-6 Jun 2008*
101. **“Polytropic spheres in Palatini  $f(R)$  gravity”**  
 E. Barausse, T. P. Sotiriou and J. C. Miller  
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*Talk given (by E.B.) at 30th Spanish Relativity Meeting (ERE 2007): Relativistic Astrophysics and Cosmology, Puerto de La Cruz, Tenerife, Spain, 10-14 Sep 2007*
102. **“The significance of matter coupling in  $f(R)$  gravity”**  
 T. P. Sotiriou  
 Proceedings of the Eleventh Marcel Grossmann Meeting on General Relativity, edited by H. Kleinert, R.T. Jantzen and R. Ruffini, p. 1223-1226, (World Scientific, Singapore, 2008) [arXiv:gr-qc/0611158]  
*Talk given at the 11th Marcel Grossman Meeting, Berlin, Germany, 23-29 Jul 2006*
103. **“The metric-affine formalism of  $f(R)$  gravity”**  
 T. P. Sotiriou and S. Liberati  
 J. Phys. Conf. Ser. **68**, 012022 (2007) [arXiv:gr-qc/0611040]  
*Talk given (by T. P. S.) at the 12th Conference on Recent Developments in Gravity (NEB XII), Nafplio, Greece, 29 Jun-2 Jul 2006*
104. **“Measuring mass moments and electromagnetic moments of a massive, axisymmetric body, through gravitational waves”**  
 T. A. Apostolatos and T. P. Sotiriou

AIP Conf. Proc. **848**, 677 (2006) [arXiv:gr-qc/0611039]

Talk given (by T. A. A.) at *Recent Advances in Astronomy and Astrophysics, Lixourion, Kefallinia island, Greece, 8-11 Sep 2005*

105. **“Multipole moments as a tool to infer from gravitational waves the geometry around an axisymmetric body”**

T. P. Sotiriou and T. A. Apostolatos

AIP Conf. Proc. **861**, 756 (2006) [arXiv:gr-qc/0609091]

Talk given (by T. P. S.) at *Albert Einstein’s Century International Conference, Paris, France, 18-22 Jul 2005*

106. **“Extending Sibgatullin’s ansatz for the Ernst potential to generate a richer family of axially symmetric solutions of Einstein’s equations”**

T. P. Sotiriou and G. Pappas

J. Phys. Conf. Ser. **8**, 23 (2005) [arXiv:gr-qc/0504122]

Talk given (by T. P. S.) at *the 11th Conference on Recent Developments in Gravity (NEB XI), Mytilene, Lesbos, Greece, 2-6 Jun 2004*

### *Others publications*

107. **“Black holes without special relativity”**

J. Bhattacharyya, M. Colombo and T. P. Sotiriou,

<https://cqgplus.com/2017/03/27/black-holes-without-special-relativity/>

*Invited contribution to CQG+*

108. **“Might black holes reveal their inner secrets?”**

T. Jacobson and T. P. Sotiriou,

<http://fqxi.org/community/forum/topic/594>

*Third prize in the FQXi “What’s Ultimately Possible in Physics?” Essay Contest*

### *Overview of Citations*

According to Google Scholar (last updated: November 10, 2020):

Total number of citations:	10810
h index:	49
i10-index:	88
Average number of citations/paper:	≈100

1 paper has more than 2500 citations, 12 more papers have more than 200 citations, 13 more papers have 100 or more citations and 21 more papers have 50 or more citations. Paper no. 75 in the list above is the 3rd most cited paper of all time in the [gr-qc] archive (General Relativity and Quantum Cosmology) — the first 2 are the LIGO discovery papers.