# CV: Sigbjørn Hervik

## Address and Personal Details


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Date of birth: 7th September 1976
Nationality: Norwegian,

Languages: Norwegian (native), English (fluent)

## Education

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| Aug '95-May '98 | Undergraduate Studies (**Cand. mag.**) at the Faculty of Mathematics and Natural Science, University of Oslo, Norway. |
| Jun '98-Dec '99 | **Cand. Scient.** studies at Department of Physics, University of Oslo. Supervisor: Prof. Ø. Grøn. Thesis title: *Canonical Cosmology: Towards a Gravitational Entropy?* |
| Apr '01-Feb '04 | **PhD** studies in Applied Mathematics and Theoretical Physics at DAMTP, Cambridge University. Funded by The Research Council of Norway and an Isaac Newton Studentship.<br>Supervisor: Prof. John D. Barrow. Thesis title: *Mathematical Cosmology: Bianchi models, Asymptotics and Extra dimensions.* Submitted Feb 6, 2004. The degree of **PhD** conferred Oct 16, 2004. |

## Working Experience

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| 2020 - Present | "Studieprogramleder", University of Stavanger. |
| 2008 - Present | Professor in applied mathematics, University of Stavanger. |
| 2013 - 2016 | Vice-dean of Academic Affairs, Faculty of Science and Technology, University of Stavanger. |
| 2006 - 2008 | Assistant Professor, teaching "Mathematics for Commerce", Dalhousie University. |
| 2004 - 2008 | PostDoc, Dalhousie University, Halifax, NS, Canada, with Prof. Alan A. Coley. |
| 1997 - 1999 | Teaching Assistant for various courses at the Department of Mathematics and Department of Physics, University of Oslo. |

## Awards/Achievements

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| 2022 | Awarded the Olav Thon Foundation's National Prize for Excellence in Teaching 2022. Prize amount: **500kNOK**. |
| 2012 | Elected member of the Stavanger Academy of Science and Letters |
| 2011 | Elected member of the Norwegian Academy of Technological Sciences. |
| 2008 - Present | Awarded an adjuct Professorship at Dalhousie University, Halifax, NS, Canada. |
| 2008 | Became a Professor in applied mathematics at the age of 31 (youngest in Norway at the time). |
| 2006 | Paper entitled "The late-time behaviour of vortic Bianchi type VIII universes" (with W.C. Lim) *Class. Quant. Grav.* **23** (2006) 3017, elected by the Editoral Board to one of CQG's highlights in 2005-2006. |

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| 2006 | Essay entitled "Cosmology: a bird eye's view" (with A.A. Coley and W.C. Lim) received an honorable mention in the Gravity Research Foundation Essay Competition 2006. |
| May '06-May '07 | AARMS PDF award winner |
| 2005 | Paper entitled "Future Asymptotic behaviour of Tilted Bianchi models of type IV and $VII_h$" (with R.J. van den Hoogen and A.A. Coley) *Class. Quant. Grav.* **22** (2005) 607, elected by the Editoral Board to one of CQG's highlights in 2004-2005. |
| May '04-May '06 | Killam PDF award winner, Dalhousie University. |
| Jan '04-Jun '04 | AARMS PDF award winner. |
| 2004 | Fellow of the Cambridge Overseas Society. |
| 2003 | Received a Rayleigh-Knight prize (2nd prize), University of Cambridge, for an essay entitled "Multidimensional Cosmology: Spatially homogeneous models of dimension 4+1" (enlarged and revised version of paper published in CQG). |
| 2003 | Paper entitled "The Weyl tensor in spatially homogeneous cosmologies" (with J.D. Barrow) *Class. Quantum Grav.* **19** (2002) 5173, elected by the Editoral Board to one of CQG's highlights in 2002-2003. |
| Oct '02-Apr '04 | Isaac Newton Studentship, University of Cambridge. |
| 2001 | Honorary Cambridge Overseas Scholar. |
| Apr '01-Mar '04 | Doctoral Fellow of the Research Council of Norway. |
| 1995 | Participant of the XXVI International Physics Olympiad in Canberra, Australia 1995. |

## Funding

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| 2016-22 | PI of a **16.6 MNOK** FRIPRO-Toppforsk grant, through "Fellesløftet III".<br>Title: Pseudo-Riemannian Geometry and Polynomial Curvature Invariants: Classification, Characterisation and Applications, Project No.: **250367/F20** |
| 2014 | Yggdrasil grant for incoming visitor (3 months), Research Council of Norway. |
| 2012-14 | Program area grant, approx **200 kNOK** a year, University of Stavanger (Program leader). |
| 2011 | Yggdrasil grant for incoming visitor (10 months), Research council of Norway. |
| 2010 | Awarded a 3-month Leiv Eirikson mobility grant (NFR) for a research stay at Dalhousie Univeristy, April - June 2010. Project No:**200910/V11**. |
| 2001-04 | Awarded a 3-year Personal PhD grant (**1.2MNOK**), Research Council of Norway. |

## Administrative duties

- 'Studieprogramleder' at IMF, UiS, (2020 - ).
- Group leader for the Math group, UiS (2010 - 2013).
- The UiS representative in the Norwegian Research Council's follow-up panel based on the report "Basic Physics Research in Norway - An Evaluation".
- Member of the committee for the establishment of a Bachelor/Master programme in mathematics and Physics, Dept. of mathematics and the natural sciences, UiS.
- Member of the committee for the establishment of a joint PhD programme in mathematics and Physics, Dept. of mathematics and the natural sciences, UiS.
- External examiner for Master exams at UiO (Dept. of Mathematics, dept. of Physics, and Dept. of Astrophysics).
- External examiner for PhD examinations at Vrije Universitet Amsterdam, University of Cambridge, NTNU and Czech acad. of Math. Sci.

## Supervising Experience

- Bachelor Theses: 9.
- Master Theses: 8.
- PhD: 4 as main supervisor.

## Miscellaneous

- Held approximately 35 seminars and talks at conferences and at universities across Europe, Asia and the Americas.
- Have held approximately 20 (semi-)popular talks in Norway since 2008.
- Have been a reviewer for The American Mathematical Society since March 2001. (approx. 60 papers and 3 books by May 2011)
- Have refereed approx. 70 papers for *Gen. Rel. and Grav.*; *J. of Geom. and Phys.*; *Astroph. and Space Science*; *Indian J. of Pure and Appl. Math.*; *Int. J. Mod. Phys. A & D*; *J. Phys. A: Math. Theor.*; *Physica Scripta*; *Cent. E. J. of Phys.*; *Phys. Rev. D*; *Astrophys. J.*; *ISRN Geometry*; *J. Nonl. Math. Phys.*; *J. Math. Phys.* and *Class. and Quantum Grav.*. Have also been reviewer for Springer and Pearson.
- Elected member of the Norwegian Acadamy of Technological Sciences.
- Member of Norwegian Mathematics Society and the Norwegian Physics Society
- Life Member of the International Society on General Relativity and Gravitation.

## Publications

- 103 papers accepted or published in peer-refereed journals by Oct 2020
- 9 papers published in conference proceedings.
- Textbook: *Einstein's General theory of Relativity: With modern applications in Cosmology* (with Ø. Grøn), Springer: New York, 2007.
- Lecture Notes: Lecture notes on Lie groups and Lie algebras, UiS, 2014.

Below is a table with a summary of the citation count of the papers. Here, i$N$-index is the number of papers with citation count $\geq N$. Source: Google Scholar (Oct 2022).

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| Number of publications in refereed Journals: | 103 |
| $h$-index: | 30 |
| i50-index: | 18 |
| i10-index: | 62 |
| Total number of Citations: | 3395 |

**Most recent publications:**

1. A. A. Coley and S. Hervik, *Universality and constant scalar curvature invariants*, *ISRN Geometry*, Volume 2011 (2011), Article ID 248615.
2. A. A. Coley, S. Hervik, M. N. Durkee and M. Godazgar, *Algebraic classification of five-dimensional spacetimes using scalar invariants*, *Class. Quantum Grav.* **28** (2011) 155016.
3. S. Hervik, D. F. Mota and M. Thorsrud, *Inflation with stable anisotropic hair: Is it cosmologically viable?*, *JHEP* **11** (2011) 146.
4. S. Hervik, *Pseudo-Riemannian VSI Spaces. II*, *Class. Quantum Grav.* **29** (2012) 095011.
5. A. Coley, S. Hervik, M. Ortaggio and L. Wylleman, *Refinements of the Weyl tensor classification in five dimensions*, *Class. Quantum Grav.* **29** (2012) 155016.

6. M. Thorsrud, D. F. Mota and S. Hervik, *Cosmology of a Scalar Field Coupled to Matter and an Isotropy-Violating Maxwell Field*, JHEP **1210**, 066 (2012)
7. S. Hervik, M. Ortaggio and L. Wylleman, *Minimal tensors and purely electric or magnetic spacetimes of arbitrary dimension*, *Class. Quant. Grav.* **30**, 165014 2013.
8. M. Gurses, S. Hervik, T. C. Sisman and B. Tekin, *AdS-Wave Solutions of f(Riemann) Theories*, *Phys. Rev. Lett.* **111**, 101101 (2013).
9. D. Shogin and S. Hervik, *Evolution of a Simple Inhomogeneous Anisotropic Cosmological Model with Diffusion*, JCAP **1310**, 005 (2013)
10. S. Hervik, M. Ortaggio and L. Wylleman, *Electric and magnetic Weyl tensors in higher dimensions*, Springer Proc. Phys. **157**, 287 (2014)
11. A. Coley, S. Hervik, D. McNutt, N. Musoke and D. Brooks, *Neutral signature Walker-VSI metrics*, *Class. Quant. Grav.* **31**, 035015 (2014).
12. S. Hervik, V. Pravda and A. Pravdova, *Type III and N Universal spacetimes*, arXiv:1311.0234 [gr-qc], accepted *Class. Quant. Grav.*.
13. D. Shogin and S. Hervik, *The late-time behaviour of tilted Bianchi type VIII universes in presence of diffusion*, *Class. Quant. Grav.* **31**, 135006 (2014).
14. D. Shogin and S. Hervik, *Dynamics of tilted Bianchi models of types III, IV, V in presence of diffusion*, *Class. Quant. Grav.*. **32**, 055008 (2015)
15. S. Hervik, A. Haarr and K. Yamamoto, *$\mathcal{I}$-degenerate pseudo-Riemannian metrics*, *J. Geom. Phys.*, **98**, 384 (2015)
16. D. Shogin P.A. Amundsen and S. Hervik, *On the viability of the truncated Israel-Stewart theory in cosmology*, *Class. Quant. Grav.* **32**, 195012 (2015)
17. S. Hervik, T. Malek, V. Pravda and A. Pravdova, *Type II universal spacetimes*, *Class. Quant. Grav.* **32**, 245012 (2015)
18. C. Helleland and S. Hervik, *A Wick-rotatable metric is purely electric*, *J. Geom. Phys.* **123**, 424 (2018)
19. C. Helleland and S. Hervik, *Wick rotations and real GIT*, *J. Geom. Phys.* **123**, 343 (2018)
20. S. Hervik, V. Pravda and A. Pravdova, *Universal spacetimes in four dimensions, JHEP* **1710**, 028 (2017)
21. B. D. Normann, S. Hervik, A. Ricciardone and M. Thorsrud, *Bianchi cosmologies with p-form gauge fields, Class. Quant. Grav.* **35**, 095004 (2018)
22. S. Hervik, *On a new class of infinitesimal group actions on pseudo-Riemannian manifolds*, `arXiv:1805.09402 [math-ph]`.
23. S. Hervik, M. Ortaggio and V. Pravda, *Universal electromagnetic fields*, *Class. Quant. Grav.* **35**, 175017 (2018)
24. C. Helleland and S. Hervik, *Real GIT with applications to compatible representations and Wick-rotations*, *J. Geom. Phys.* , **142**, 92 (2019)
25. S. Hervik and D. McNutt, *Locally Homogeneous Kundt Triples and CSI Metrics*, *Class. Quant. Grav.* **36**, no. 18, 185013 (2019)
26. S. Hervik and M. Ortaggio, *Universal Black Holes*, *JHEP* **2002**, 047 (2020)
27. D. McNutt, A. Coley, L. Wylleman and S. Hervik, *Locally Boost Isotropic Spacetimes and the Type $\mathbf{D}^k$ Condition,* accepted.
28. B. D. Normann, S. Hervik, A. Ricciardone and M. Thorsrud, *A Study of Inhomogeneous Massless Scalar Gauge Fields in Cosmology,* accepted.
29. B. D. Normann and S. Hervik, *Approaching Wonderland,* accepted.
30. B. D. Normann and S. Hervik, *Collins in Wonderland,* submitted.