

CURRICULUM VITAE

Personal data:

- Name: Aleksandar Vladimirov Petkov
- Date of birth: 17th December 1985
- Place of birth: Bulgaria, Montana
- Home address: Bulgaria, Montana 3400, 7 Klokochnitza str., ap. 3
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Education:

- Secondary education: 1999-2004, Technical school of economics, Montana, Bulgaria
- BSc: 2004-2008, “Mathematics”, Sofia University, Sofia, Bulgaria
- MSc: 2008-2010, “Dynamical systems and geometry”, Sofia University, Sofia, Bulgaria
- PhD: 2011-2014, “Geometry”, Sofia University, Sofia, Bulgaria; PhD adviser: Prof. Stefan Ivanov, DSc; defended on 29th April 2014

Languages:

- Bulgarian (maternal)
- English (fluent)
- French (very good)

- Russian (basic)

Professional data:

1. Positions:

- January 27th 2014 – July 23rd 2014: Mathematician at Department of Geometry, Faculty of Mathematics and Informatics, Sofia University, Sofia, Bulgaria
- July 23rd 2014 – November 6th 2020: Assistant professor at Department of Geometry, Faculty of Mathematics and Informatics, Sofia University, Sofia, Bulgaria
- November 6th 2020 – present: Associate professor at Department of Geometry, Faculty of Mathematics and Informatics, Sofia University, Sofia, Bulgaria
- April 1st 2017 – June 30th 2017: Postdoc researcher at Institut für Mathematik, Fakultät für Mathematik, Universität Wien, Vienna, Austria
- October 1st 2017 – December 31st 2017: Postdoc researcher at Institut für Mathematik, Fakultät für Mathematik, Universität Wien, Vienna, Austria
- January 24th 2018 – March 14th 2018: Exchange visitor at Department of Mathematics, College of Arts and Sciences, University of Miami, Coral Gables, Florida, USA
- September 2nd 2019 – December 15th 2019: Visiting scholar at Institute of the Mathematical Sciences of the Americas (IMSA), University of Miami, Coral Gables, Florida, USA

- #### 2. Teaching experience:
- Differential geometry (a course for mathematics subject), Geometry (a course for computer sciences subjects), Linear algebra and Analytical geometry (a course for

- physical and chemical sciences subjects), Mathematics (a course for geological sciences subject), Analytical geometry (a course for statistics and mathematics subjects)
3. Research interests: String theory and related geometric structures, Geometry of hyperKähler manifolds with torsion (HKT-manifolds), Sub-Riemannian geometry (especially Geometry of quaternionic contact (QC-) manifolds), Contact geometry, Geometric analysis and PDEs, Complex algebraic geometry

List of publications:

1. Ivanov, S., A. Petkov. "HKT manifolds with holonomy $SL(n,H)$." International Mathematics Research Notices (2011), doi: 10.1093/imrn/rnr160, 21 pages.
2. Ivanov, S., A. Petkov, D. Vassilev. "The Sharp Lower Bound of the First Eigenvalue of the Sub-Laplacian on a Quaternionic Contact Manifold." Journal of Geometric Analysis, doi: 10.1007/s12220-012-9354-9, (2012): 1-23.
3. Ivanov, S., A. Petkov, D. Vassilev. "The sharp lower bound of the first eigenvalue of the sub-Laplacian on a quaternionic contact manifold in dimension seven." Nonlinear Analysis 93 (2013): 51-61.
4. Ivanov, S., A. Petkov, D. Vassilev. "The Obata sphere theorems on a quaternionic contact manifold of dimension bigger than seven." Journal of Spectral Theory, vol. 7, No. 4 (2017), 1119-1170.
5. Petkov, A. "A Lichnerowicz-type result on a seven-dimensional quaternionic contact manifold." Ann. Sofia Univ., Fac. Math. and Inf. 101 (2014): 193-213.
6. Ivanov, S., A. Petkov. "The qc Yamabe problem on non-spherical quaternionic contact manifolds." Journal de Mathématiques Pures et Appliquées (2018) DOI: 10.1016/j.matpur.2018.06.011.
7. Petkov, A. "An Entropy Formula for the Heat Equation on a Quaternionic Contact Manifold." C. R. Acad. Bulg. Sci., Tome 72, No 10, 2019.

8. Petkov, A. "On Some Applications of Entropy Formula for the Heat Equation on a Quaternionic Contact Manifold." C. R. Acad. Bulg. Sci., Tome 73, No 2, 2020.