

## LIST OF PUBLICATIONS

VLADIMIR V.KISIL

This is the complete List of publications. It is also available as a [PDF file](#). Hyperlinks are provided whenever possible.

### (A) The research monograph:

V.V. Kisil, *Geometry of Möbius Transformations: Elliptic, Parabolic and Hyperbolic Actions of  $SL(2, \mathbf{R})$* , Imperial College Press, 2012.

### (B) Published Papers (in Refereed Journals)

- (1) V.V. Kisil, *Two-sided Convolution Operators Algebra on the Heisenberg Group*, Dokl. Acad. Nauk. SSSR, v. **325**(1992), no. 1, p. 20–23, (Russian, translated in *Russ. Acad. of Sci. Doklady, Math*, v. **46**(1993), pp. 12–16). MR 93j:22018. Zbl**801.47037**.
- (2) V.V. Kisil, *On Pseudodifferential Operators Algebra on the Heisenberg Group*, Sibirsk. Mat. Zh. **34**(1993), no. 6, pp. 75–85. (Russian, translated in *Siberian Math. J.*, v. **34**(1993), no. 3, pp. 1066–1075). MR 95a:47053. Zbl**811.58058**.
- (3) V.V. Kisil, *Local Properties of Convolution Operators with Singular Kernels on the Heisenberg Group*, *Mat. Zam.*, **56** (1994), N 2, pp. 41–55, (Russian, translated in *Math. Notes* **56**(1995), no. 1–2, pp. 790–800). MR 95j:22019. Zbl**841.43020**.
- (4) V.V. Kisil, *Spectrum of the Algebra Generated by Two-Sided Convolutions on the Heisenberg Group and Operators of Multiplication by Continuous Functions*, Dokl. Akad. Nauk, v. **337**(1994), no. 4, pp. 439–441 (Russian, translated in *Russ. Acad. of Sci Doklady, Math*, v. **50**(1995), no. 1, pp. 92–97). MR 95j:22019. Zbl**853.22005**.
- (5) V.V. Kisil and O.P. Pilipenko, *The Artificial Intelligence: Structure and Examining*, Science and Science of Science, v. **1–2**(1995), no. 7, pp. 73–77.  
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E-print: [PDF http://www.maths.leeds.ac.uk/~kisilv/pilip1.pdf](http://www.maths.leeds.ac.uk/~kisilv/pilip1.pdf).
- (6) V.V. Kisil, *Connection between Two-Sided and One-Sided Convolution Type Operators on Non-Commutative Groups*, *Integr. Equat. Oper. Th.*, v. **22**(1995), no. 3, pp. 317–332. MR 96d:44004. Zbl**840.43020**.
- (7) V.V. Kisil. *Connection between Different Function Theories in Clifford Analysis*. *Advances in Applied Clifford Algebras*, v. **5**(1995), no. 1, p. 63–74. MR 97a:30061. Zbl**960.24964**.  
E-print: [arXiv:funct-an/9501002](http://arxiv.org/abs/funct-an/9501002).
- (8) N. Vasilevski, V. Kisil, E. Ramírez de Arellano, R. Trujillo, *The Toeplitz Operators with Discontinuous Pre-Symbols in the Fock Space*, Dokl. Acad. Nauk. of Russia, v. **345**(1995), no. 2, pp. 153–155 (Russian). MR 97b:47022. Zbl**980.09694**.
- (9) V.V. Kisil. *Integral Representations and Coherent States*. *Bulletin of the Belgian Mathematical Society*, v. **2**(1995), No 5, pp. 529–540. MR 97b:22012. Zbl**844.32005**.
- (10) V.V. Kisil, *Plain Mechanics: Classical and Quantum*, *J. of Natural Geometry*, v. **9**(1996), no. 1, pp. 1–14. MR 96m:81112. Zbl**836.22010**. E-print: [arXiv:funct-an/9405002](http://arxiv.org/abs/funct-an/9405002).
- (11) V.V. Kisil, *Local Algebras of Two-Sided Convolution on the Heisenberg Group*, *Mat. Zam.*, v. **59**(1996), No 3, pp. 370–381, (Russian). MR 97h:22006. Zbl**876.22012**.
- (12) V.V. Kisil, *Möbius Transformations and Monogenic Functional Calculus*, *Electron. Res. Announc. Amer. Math. Soc.*, v. **2**(1996), No 1, pp. 26–33. MR 98a:47018. Zbl**869.47013**.
- (13) V.V. Kisil, *Construction of Integral Representations in Spaces of Analytic Functions*, Dokl. Acad. Nauk. of Russia, v. **350**(1996), No 4, pp. 446–448 (Russian). MR 98d:46027. Zbl**980.25715**.
- (14) V.V. Kisil and E. Ramírez de Arellano. *The Riesz-Clifford Functional Calculus for Several Non-Commuting Operators and Quantum Field Theory*, *Math. Methods Appl. Sci.*,

- 19(1996), No 8, pp. 593–605.  
MR 97h:47009. Zbl853.47012 E-print: [arXiv:funct-an/9502006](#).
- (15) V.V. Kisil, E. Ramírez, *A Functional Model for Quantum Mechanics: Unbounded Operators*, Math. Methods Appl. Sci., **20**(1997), No 9, pp. 745–757. MR 98f:47028. Zbl970.31204.
- (16) O.P. Prezhdo and V.V. Kisil, *Mixing Quantum and Classic Mechanics*, Phys. Rev. (A), **56**(1997), No 1, pp. 162–176. MR 99j:81010 E-print: [arXiv:quant-ph/9610016](#).
- (17) V.V. Kisil. *Relativistic Quantization and Improved Equation for a Free Relativistic Particle*, Physics Essays, **11**(1998), No 1, pp. 69–80. E-print: [arXiv:quant-ph/9502022](#). MR 99c:81117.
- (18) V.V. Kisil, *A Paley–Wiener Theorem for Nilpotent Lie Groups*, Ukr. Math. J., **50**(1998), No 11, pp. 1564–1566.  
E-print: [arXiv:funct-an/9602007](#). MR 2000m:22010. Zbl934.43003.
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- (20) V.V. Kisil, *Relative Convolutions I. Properties and Applications*, Advances in Mathematics, **147**(1999), no. 1, pp. 35–73. E-print: [arXiv:funct-an/9410001](#). MR 2001h:22012. Zbl933.43004.
- (21) V.V. Kisil, *Wavelets in Banach Spaces*, Acta Appl. Math. **59**(1999), no. 1, pp. 79–109. E-print: [arXiv:math/9807141](#). MR 2001c:43013. Zbl955.42024.
- (22) V.V. Kisil, *Analysis in  $\mathbf{R}^{1,1}$  or the Principal Function Theory*, Complex Variables Theory Appl., **40**(1999), no. 2, pp. 93–118. E-print: [arXiv:funct-an/9712003](#). MR 2000k:30078. Zbl980.36633.
- (23) V.V. Kisil, *The Umbral Calculus and Cancellation Semigroup Algebras*, Zeitschrift für Analysis und ihre Anwendungen, **19**(2000), no. 2, pp. 315–338.  
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- (27) V.V. Kisil, *An Example of Clifford Algebras Calculations with GiNaC.*, Advances in Applied Clifford Algebras, **15**(2005), no. 2, pp. 239–269. E-print: [arXiv:cs.MS/0410044](#).
- (28) V.V. Kisil, *Monogenic Calculus as an Intertwining Operator*, Bull. Belg. Math. Soc. Simon Stevin, **11**(2005), no. 5, pp. 739–757. E-print: [arXiv:math.FA/0311285](#). MR 2006a:47025.
- (29) V.V. Kisil, *p-Mechanics and field theory*, Rep. Math. Phys. **56** (2005), no. 2, 161–174, E-print: [arXiv:quant-ph/0402035](#). MR 2006h:53104.
- (30) V.V. Kisil, *A quantum-classical brackets from p-mechanics*, Europhys. Lett. **72**(2005) no. 6, 873–879, E-print: [arXiv:quant-ph/0506122](#). MR 2006k:81134.
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- (32) V.V. Kisil, *Two-Dimensional Conformal Models of Space-Time and Their Compactification*, J. Math. Phys., **48**(2007), no. 7, 073506. E-print: [arXiv:math-ph/0611053](#).
- (33) V.V. Kisil, *Starting with the group  $SL(2, \mathbb{R})$* , Notices Amer. Math. Soc., **54**(2007), no. 11, pp. 1458–1465. E-print: [arXiv:math.GM/0607387](#).
- (34) V.V. Kisil, *Comment on “Do we have a consistent non-adiabatic quantum-classical mechanics?” by Agostini F. et al.*, Euro Phys. Lett. EPL, **89** (2010) 50005, E-print: [arXiv:0907.0855](#), doi: [10.1209/0295-5075/89/50005](#).
- (35) V.V. Kisil, *Erlangen Program at Large—1: Geometry of Invariants*, SIGMA **6** (2010), 076, 45 pages, E-print: [arXiv:math.CV/0512416](#).
- (36) V.V. Kisil, *Computation and Dynamics: Classical and Quantum*, AIP Conference Proceedings, v. **1232** (2010), pp. 306–312. doi: [10.1063/1.3431506](#), E-print: [arXiv:0909.1594](#).

- (37) V.V. Kisil, *Covariant Transform*, J. Phys.: Conf. Ser., v. **284** (2011), p. 012038. doi: [10.1088/1742-6596/284/1/012038](https://doi.org/10.1088/1742-6596/284/1/012038), E-print: [arXiv:1011.3947](https://arxiv.org/abs/1011.3947).
- (38) V.V. Kisil, *Erlangen Programme at Large 3.2: Ladder Operators in Hypercomplex Mechanics*, Acta Polytechnica, v. **51** (2011), n. 4, pp. 44–53, E-print: [arXiv:1103.1120](https://arxiv.org/abs/1103.1120).
- (39) V.V. Kisil, *Hypercomplex Representations of the Heisenberg Group and Mechanics*, Internat. J. Theoret. Phys., v. **51**(2012), no. 3, pp. 964–984, doi: [10.1007/s10773-011-0970-0](https://doi.org/10.1007/s10773-011-0970-0), E-print: [arXiv:1005.5057](https://arxiv.org/abs/1005.5057).
- (40) V.V. Kisil, *Operator Covariant Transform and Local Principle*, J. Phys. A: Math. Theor. **45** (2012) 244022. doi: [10.1088/1751-8113/45/24/244022](https://doi.org/10.1088/1751-8113/45/24/244022). E-print: [arXiv:1201.1749](https://arxiv.org/abs/1201.1749).
- (41) V.V. Kisil, *Induced Representations and Hypercomplex Numbers*, Adv. Appl. Clifford Algebras, **23**(2013), no. 2, pp. 417–440. doi: [10.1007/s00006-012-0373-1](https://doi.org/10.1007/s00006-012-0373-1), E-print: [arXiv:0909.4466](https://arxiv.org/abs/0909.4466).
- (42) V.V. Kisil, *Is Commutativity of Observables the Main Feature, which Separate Classical Mechanics from Quantum?*, Izvestiya Komi nauchnogo centra UrO RAN, **3**(2012), n. 11, p. 4–9. E-print: [arXiv:1204.1858](https://arxiv.org/abs/1204.1858).
- (43) V.V. Kisil, *Calculus of Operators: Covariant Transform and Relative Convolutions*, Banach J. Math. Anal., **8**(2014), no. 2., pp.156–184, E-print: [arXiv:1304.2792](https://arxiv.org/abs/1304.2792). On-line.
- (44) V.V. Kisil, *The Real and Complex Techniques in Harmonic Analysis from the Point of View of Covariant Transform*, Eurasian Math. J., **5**(2014), no. 1, pp. 95–121. E-print: [arXiv:1209.5072](https://arxiv.org/abs/1209.5072). On-line.
- (45) V.V. Kisil, *Remark on Continued Fractions, Moebius Transformations and Cycles*, Izvestiya Komi nauchnogo centra UrO RAN, **25**(2016), p. 11–17. E-print: [arXiv:1412.1457](https://arxiv.org/abs/1412.1457).
- (46) V.V. Kisil, *Poincaré Extension of Möbius Transformations*, Compl. Var. Ell. Eq., **62**(2017), no. 9, pp. 1221–1236. doi:[10.1080/17476933.2016.1250399](https://doi.org/10.1080/17476933.2016.1250399). E-print: [arXiv:1507.02257](https://arxiv.org/abs/1507.02257).
- (47) V.V. Kisil, *Symmetry, Geometry, and Quantization with Hypercomplex Numbers*, Geometry, Integrability and Quantization, **18** (2017), pp. 11–76. E-print: [arXiv:1611.05650](https://arxiv.org/abs/1611.05650).

#### (C) Other Papers Published in Refereed Editions

- (1) V.V. Kisil, *Some Subjective Notes about Mathematical Simulation of Social Systems*, in K.G. Troitzsch ed., *Catastrophe, Chaos and Self-Organization in Social System: The proceeding of Seminar on Catastrophic Phenomena in Soviet Society and Self-organization in Social Processes*, Kiev, 7–10 September, 1992, Universität Koblenz-Landau, Koblenz, 1993, pp. 3–10.  
E-print: PDF <http://www.maths.leeds.ac.uk/~kisilv/social.pdf>.  
E-print: HTML <http://www.maths.leeds.ac.uk/~kisilv/socialf.html>.
- (2) V.V. Kisil, *Clifford Valued Convolution Operator Algebras on the Heisenberg Group*, in F. Brackx et. al. (eds. ), *Clifford Algebras and Applications in Mathematical Physics*, Kluwer Academic Publishers, Dordrecht, The Netherlands, 1993, pp. 287–294. Zbl**832.15016**.
- (3) V.V. Kisil and O.P. Pilipenko, *Verifying Artificial Intelligence*, in S. Raczynski, *Computer Simulation and Artificial Intelligence*, Universidad Panamericana, Mexico, 1994, pp. 8–11.
- (4) V.V. Kisil. *Quantum Probabilities and Non-Commutative Fourier Transform on the Heisenberg Group*. In Nigel Kalton, Elias Saab, and Montgomery-Smith editors, *Interaction between Functional Analysis, Harmonic Analysis and Probability*, Lect. Notes in Pure and Applied Mathematics, chapter 24, pp. 255–266, Marcel Dekker, Inc., New York, 1995. MR 97b:81060. Zbl**842.22020**.
- (5) V.V. Kisil and M.V. Kuzmin, *Informational Systems with Structures Simulating Their Contents*. In Stanislav Raczynski, editor, *III Conference on Computer Simulation, Proceedings*. Universidad Panamericana, México, 1995, pp. 14–20.  
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- (6) V.V. Kisil, *Towards to Analysis in  $\mathbf{R}^{p,q}$* , in W. Sprössig and K. Gürlebeck eds., *Proceedings of the Symposium “Analytical and Numerical Methods in Quaternionic and Clifford Analysis”*, Seiffen, 1996, pp. 95–100. Zbl**882.30030**.

- (7) V.V. Kisil, *How Many Essentially Different Function Theories Exist?*, in V. Dietrich, K. Habetha, and G. Jank (eds): *Clifford algebras and their application in mathematical physics. Aachen 1996*. Kluwer Academic Publishers, 1998, pp. 175-184. E-print: [clf-alg/kisi9602](#). MR 99g:30057. Zbl980.29881.
- (8) V.V. Kisil, *Harmonic Analysis and Localization Technique*, Odessa University Herald, 3(1998), pp. 60–63. E-print: [arXiv:math/9902012](#).
- (9) V.V. Kisil. *A Function Theory in  $\mathbf{R}^{1,1}$* . in J. Ryan and D. Struppa, eds., *Dirac Operators in Analysis (Newark, DE, 1997)*, number 394 in Pitman Research Notes in Mathematics. Pitman, Boston, pp. 176–190, 1998. E-print: [arXiv:funct-an/9712003](#). MR 2002e:30041.
- (10) V.V. Kisil, *Two Approaches to Non-Commutative Geometry*, in H. Begehr, O. Celebi, and W. Tutschke, eds., *Complex Methods for Partial Differential Equations*, chapter 14, pages 219–248. Kluwer Academic Publishers, Netherlands, 1999. **The paper won Essay Competition on ICMP2000, London, UK**. E-print: [arXiv:funct-an/9703001](#). MR 2001a:01002. Zbl958.46040.
- (11) V.V. Kisil, *Wavelet Transform of Operators and Functional Calculus*, in H. Begehr, O. Celebi, and W. Tutschke, eds., *Complex Methods for Partial Differential Equations*, chapter 21, pages 325–338. Kluwer Academic Publishers, Netherlands, 1999. E-print: [arXiv:math/9807141](#). MR 2001f:43011. Zbl941.43002.
- (12) V.V. Kisil, *Nilpotent Lie Groups in Clifford Analysis: Five Directions for Research*, in F. Brackx, J.S.R. Chisholm, and V. Souček, eds., *Clifford Analysis and Its Applications*, pages 135–142. Kluwer Academic Publishers, Netherlands, 2001. E-print: [arXiv:math-ph/0009013](#). MR 2003b:30059. Zbl1005.22003.
- (13) V.V. Kisil, *Two Slits Interference Is Compatible with Particles' Trajectories*, in A. Khrennikov, ed., *Quantum Theory: Reconsideration of Foundations*, Växjö University Press, pages 215–226, 2002. E-print: [arXiv:quant-ph/0111094](#).
- (14) V.V. Kisil, *Meeting Descartes and Klein somewhere in a noncommutative space*, Highlights of Mathematical Physics (A. Fokas, J. Halliwell, T. Kibble, and B. Zegarlinski, eds.), AMS, 2002, pp. 165–189. E-print: [arXiv:math-ph/0112059](#). MR 2005b:43015
- (15) V.V. Kisil, *Tokens: an algebraic construction common in combinatorics, analysis, and physics*, Functional Analysis: Proc. of the Ukrainian Math. Congress-2001, Kiev: Inst. of Math. of NAS of Ukraine, 2002, p 146–155. E-print: [arXiv:math.FA/0201012](#).
- (16) V.V. Kisil, *p-Mechanical Brackets and Method of Orbits*, in GROUP 24: *Physical and Mathematical Aspects of Symmetries: Proceedings of the 24th International Colloquium on Group Theoretical Methods in Physics, Paris, 15-20 July 2002* (Eds. J.-P. Gazeau et al), Institute of Physics Conference Series, v. 173, Institute of Physics, 2003.
- (17) A. Brodlie and V. V. Kisil, *Observables and states in p-mechanics*, Advances in Mathematics Research, V, Nova Sci., 2003, pp. 101–136. E-print: [arXiv:quant-ph/0304023](#). MR 2117375.
- (18) V.V. Kisil, *p-Mechanics and De Donder–Weyl theory*, The Fifth International Conference “Symmetry in Nonlinear Mathematical Physics”, Proc. of Institute of Mathematics of NAS of Ukraine, v. 50 (part 3), 2004, pp. 1108–1115. E-print: [arXiv:quant-ph/0306101](#). MR 2005e:81116.
- (19) V.V. Kisil, *Spectrum as the Support of Functional Calculus*, in “Functional Analysis and its Applications” (V. Kadets and W. Zelazko, eds), Math. Studies series., v. 197, Elsevier Science Publishers, North-Holland, 2004, pp. 133–142. E-print: [arXiv:math.FA/0208249](#). MR 2005k:47038.
- (20) V.V. Kisil and D. Biswas, *Elliptic, parabolic and hyperbolic analytic function theory–0: Geometry of domains*, In *Complex Analysis and Free Boundary Flows*, volume 1 of *Trans. Inst. Math. of the NAS of Ukraine*, pages 100–118, 2004. E-print: [arXiv:math.CV/0410399](#).
- (21) V.V. Kisil, *Fillmore–Springer–Cnops Construction Implemented in GiNaC*, in “Proceedings 17th International Conference on the Applications of Computer Science and mathematics in Architecture and Civil Engineering” (K. Gürlebeck, C. Könke, eds), Bauhaus-Universität Weimar, 2006. E-print: [arXiv:cs.MS/0512073](#)

- (22) V.V. Kisil, *Wavelets Beyond Admissibility*, in “Progress in Analysis and Its Applications —Proceedings of the 7th International ISAAC Congress”, (M. Ruzhansky, J. Wirth eds.) World Scientific, 2010, pp. 219–225 E-print: [arXiv:0911.4701](#).
- (23) V.V. Kisil, *Erlangen Program at Large—2: Inventing a Wheel. The Parabolic One*, In *Complex Analysis and Free Boundary Flows*, volume 7, number 2 of *Trans. Inst. Math. of the NAS of Ukraine*, pages 89–98, 2010, E-print: [arXiv:0707.4024](#).
- (24) V.V. Kisil, *Erlangen programme at large: an Overview*. In S.V. Rogosin and A.A. Koroleva (eds.) *Advances in applied analysis*, pages 1–94, Birkhäuser Verlag, Basel, 2012. doi: [10.1007/978-3-0348-0417-2.1](#). E-print: [arXiv:1106.1686](#).
- (25) V.V. Kisil, *Boundedness of Relative Convolutions on Nilpotent Lie Groups*, *Zb. Pr. Inst. Mat. NAN Ukr. (Proc. Math. Inst. Ukr. Ac. Sci.)*, 2013 (10), n. 4–5, pp. 185–189. E-print: [arXiv:1307.3882](#)
- (26) V.V. Kisil, *Uncertainty and Analyticity*, in V.V. Mityushev(eds.), *Current Trends in Analysis and Its Applications*, pp 583–590, 2015, Springer. E-print: [arXiv:1312.4583](#).

(D) **E-prints (papers and lecture notes)**

- (1) V.V. Kisil, *Reflection Processes and Selforganization of Complex Systems*, accepted for publication by *Science and Science of Science*, but will never be published due to local hardships (Russian). E-print: [HTML](#) and E-print: [PDF](#).
- (2) B.A. Veitsman, V.V. Kisil, *Dialog-2: About Higher Education*, *Computerra*, 35(1999), (Russain).
- (3) V.V. Kisil, *Spaces of Analytic Functions and Wavelets*, lecture notes, 2000. E-print: [arXiv:math.CV/0204018](#)
- (4) V.V. Kisil, *Wavelets in Applied and Pure Maths*, lecture notes, 2003. E-print: <http://www.maths.leeds.ac.uk/~kisilv/courses/wavelets.html>
- (5) V.V. Kisil, *Erlangen program for geometry and analysis:  $SL_2(\mathbf{R})$  case study*, lecture notes, 2009–2016. E-print: [http://www.maths.leeds.ac.uk/~kisilv/courses/sl2\\_pgcourse.html](http://www.maths.leeds.ac.uk/~kisilv/courses/sl2_pgcourse.html)

(E) **Preprints**

- (1) V.V. Kisil, E. Ramírez de Arellano, R. Trujillo, and N.L. Vasilevski. *Toeplitz operators with discontinuous presymbols on the Fock space*. Reporte Interno # 155, Departamento de Matemáticas, CINVESTAV del I.P.N., Mexico City, 1994.
- (2) V.K. Kharchenko, V.V. Kisil, *The Topological Extension of a Differential Calculus*, 1995.
- (3) V.V. Kisil, *Erlangen Program at Large: Outline*, 2010 E-print: [arXiv:1006.2115](#).