

Logical theories of space and time. Bibliography of Bulgarian contributions

References

[•] **Georgi Dimov**

- [1] G. Dimov, On the Stone duality, General Topology and its Relations to Modern Analysis and Algebra V, Proc. Fifth Prague Topol. Symp. 1981, J. Novak (ed.), Heldermann Verlag, Berlin (1982), 145-146.
- [2] G. Dimov, An axiomatic characterization of the Stone duality, *Serdica*, 10, (1984), 165-173.
- [3] G. Dimov and W. Tholen, A characterization of representable dualities, *Categorical Topology and its Relations to Analysis, Algebra and Combinatorics* (Prague, 1988), J. Adámek and S. MacLane (editors), World Scientific Publishing, Teaneck, NJ, (1989), 336-357.
- [4] G. Dimov and W. Tholen, Groups of Dualities, *Transactions of the American Mathematical Society*, 336 (2), (1993), 901-915.
- [5] G. Dimov and D. Vakarelov, On Scott consequence systems, *Fundamenta Informaticae* 33, (1998), 43-70.
- [6] D. Vakarelov, G. Dimov, I. Duentsch and B. Bennett, A proximity approach to some region-based theories of space, *Journal of Applied Non-Classical Logic*, 12(3-4) (2002), 527-559.
- [7] G. Dimov, M.-C. Pedicchio and G. Tironi, Frames and Grids, *Applied Categorical Structures* 12(2) (2004), 181-196.
- [8] G. Dimov and D. Vakarelov, Contact Algebras and Region-based Theory of Space: A Proximity Approach – I, *Fundamenta Informaticae* 74(2-3) (2006), 209-249.
- [9] G. Dimov and D. Vakarelov, Contact Algebras and Region-based Theory of Space: A Proximity Approach – II, *Fundamenta Informaticae* 74(2-3) (2006), 251-282.
- [10] G. Dimov and D. Vakarelov, Topological Representation of Precontact Algebras, *Proceedings of the Eight International Seminar on Relation Methods in Computer Science*, W. MacCaull, M. Winter, I. Duentsch (Eds.), *Lecture Notes in Computer Science*, 3929 (2006), 1-16, Springer-Verlag Berlin Heidelberg.
- [11] G. Dimov, Some Generalizations of the Fedorchuk Duality Theorem – I, *Topology Appl.* 156 (2009), 728-746.

- [12] G. Dimov, A Generalization of De Vries' Duality Theorem, *Applied Categorical Structures*, 17 (2009), 501-516.
- [13] G. Dimov, A de Vries-type duality theorem for the category of locally compact spaces and continuous maps – I, *Acta Math. Hungar.* 129 (4) (2010), 314-349.
- [14] G. Dimov, A de Vries-type duality theorem for the category of locally compact spaces and continuous maps – II, *Acta Math. Hungar.* 130 (1) (2011), 50-77.
- [15] G. Dimov, Some generalizations of the Stone Duality Theorem, *Publicationes Mathematicae Debrecen* 80(3-4) (2012), 255-293.
- [16] G. Dimov, A Whiteheadian-type description of Euclidean spaces, spheres, tori and Tychonoff cubes, *Rend. Istit. Mat. Univ. Trieste*, 44 (2012), 45-74.
- [17] G. Dimov, Proximity-type Relations on Boolean Algebras and their Connections with Topological Spaces, Doctor of Sciences (Dr. Habil.) Thesis, Faculty of Mathematics and Informatics, Sofia University “St. Kl. Ohridski”, Sofia, (2013).
- [18] G. Dimov and D. Vakarelov, On the investigations of Ivan Prodanov in the theory of abstract spectra, *Annuaire de l'Universite de Sofia “St. Kliment Ohridski”*, Faculte de Mathematiques et Informatique, Livre 1 - Mathematiques, 102, (2015), 31-70.
- [19] G. Dimov, E. Ivanova, Yet another duality theorem for locally compact spaces, *Houston Journal of Mathematics*, 42 (2), (2016), 675-700.
- [20] G. Dimov, E. Ivanova-Dimova, D. Vakarelov, A Generalization of the Stone Duality Theorem, *Topology and its Applications*, 221 (2017), 237-261.
- [21] G. Dimov, D. Vakarelov, Topological Representation of Precontact Algebras and a Connected Version of the Stone Duality Theorem - I, *Topology and its Applications*, 227, (2017), 64-101.
- [22] G. Dimov, D. Vakarelov, Topological Representation of Precontact Algebras and a Connected Version of the Stone Duality Theorem - II, *Serdica Math. J.*, 44 (1-2), (2018), 31-80.
- [23] G. Dimov, E. Ivanova-Dimova, I. Duentsch, On dimension and weight of a local contact algebra, *Filomat*, 32 (15), (2018), 5481-5500.
- [24] G. Dimov, E. Ivanova-Dimova, W. Tholen, Extensions of dualities and a new approach to de Vries' Duality Theorem, *TACL 2019*, 76.
- [25] G. Dimov, E. Ivanova-Dimova, W. Tholen, Semi-Reflective Extensions of Dualities and a New Approach to the Fedorchuk Duality, *TACL 2019*, 74.
- [26] G. Dimov, E. Ivanova-Dimova, W. Tholen, Extensions of dualities and a new approach to the Fedorchuk duality, *Topology and its Applications*, 281, (2020) 107207.(26 pages).

- [27] G. Dimov, E. Ivanova-Dimova, Two extensions of the Stone Duality to the category of zero-dimensional Hausdorff spaces, *Filomat*, 35 (6) (2021), 1851-1878.
 - [28] G. Dimov, E. Ivanova-Dimova, Extensions of the Stone Duality to the category of Boolean spaces and continuous maps, *Quaestiones Mathematicae*, 45(7), (2022), 1115–1124.
 - [29] G. Dimov, E. Ivanova-Dimova, W. Tholen, Categorical Extension of Dualities: From Stone to de Vries and Beyond, I, *Applied Categorical Structures*, 30(2), (2022), 287–329.
 - [30] G. Dimov, E. Ivanova-Dimova, W. Tholen, Categorical Extension of Dualities: From Stone to de Vries and Beyond, II, *Topology and its Applications* (2023) (to appear).
-] **Valentin Goranko**
- [31] Ph. Balbiani, V. Goranko, Modal logics for parallelism, orthogonality, and affine geometries. *Journal of Applied Non-Classical Logics* 12 (2002) 365-397.
 - [32] Ph. Balbiani, V. Goranko, R. Kelerman and D. Vakarelov, Logical Theories for Fragments of Elementary Geometry. In: M. Aiello, I. Pratt-Hartmann, J. Van Benthem (Eds) *Handbook of Spatial Logics*, (2007), 343-428, Springer.
-] **Tatyana Ivanova**
- [33] T. Ivanova, Extended contact algebras and internal connectedness, *Proceedings of 10th Panhellenic Logic Symposium 2015*, Samos, Greece, (2015), 87-91.
 - [34] T. Ivanova and D. Vakarelov, Distributive mereotopology: extended distributive contact lattices, *Annals of Mathematics and Artificial Intelligence*, vol.77(1), (2016), 3–41.
 - [35] T. Ivanova, Logics for relational geometric structures: distributive mereotopology, extended contact algebras and related quantifier-free logics, Ph.D. thesis, Sofia University, 2016.
 - [36] T. Ivanova, Logics for extended distributive contact lattices, *Journal of Applied Non-Classical Logics*, vol.28(1), (2018), 140–162.
 - [37] T. Ivanova, Extended distributive contact lattices and extended contact algebras, *Proceedings of the 2020 Federated Conference on Computer Science and Information Systems 2020*, M. Ganzha, L. Maciaszek, M. Paprzycki (eds). ACSIS, 21, (2020), 69-75, DOI: 10.15439,2020,F55.
 - [38] T. Ivanova, Extended contact algebras and internal connectedness, *Stud Logica*, vol. 108, (2020), 239–254.

- [39] T. Ivanova, T. Tinchev, The fragment of elementary plane Euclidean geometry based on perpendicularity alone with complexity PSPACE-complete, arXiv preprint arXiv:2107.10128, (2021)
- [40] Ph. Balbiani and T. Ivanova, Relational representation theorems for extended contact algebras, *Studia Logica*, vol.109, (2021), 701–723.
- [41] T. Ivanova, Contact join-semilattices, *Stud. Logica*, vol.110, (2022), 1219–1241.
- **Elza Ivanova-Dimova**
 - [42] E. Ivanova-Dimova, Some Isomorphism Theorems for MVD-algebras, *International Electronic Journal of Pure and Applied Mathematics*, 9 (2) (2015), 67-87.
- **Valadislav Nenchev**
 - [43] V. Nenchev and D. Vakarelov, An axiomatization of dynamic ontology of stable and unstable mereological relations, *Proceedings of 7th Panhellenic Logic Symposium, Patras, Greece, 2009*, pp. 137–141.
 - [44] V. Nenchev, Logics for stable and unstable mereological relations, *Central European Journal of Mathematics* 9(6), (2011), 1354–1379.
 - [45] V. Nenchev, Dynamic relational mereotopology. Logics for stable and unstable relations, *Logic and Logical Philosophy* 22, (2013), 295–325
 - [46] V. Nenchev, Region-based theories of space and time. Dynamic relational mereotopology. Ph.D. thesis, Sofia University, 2014.
 - [47] V. Nenchev, Effective representation in point-free theories, *Logic Colloquium 2015, August 03–08, 2015, Helsinki, Finland, Proceedings*, pp. 748-749 Aug 2015
- **Yavor Nenov**
 - [48] Y. Nenov, D. Vakarelov, Modal logics for mereotopological relations, *Advances in Modal Logic*, volume 7, College Publications (2008), 249-272.
 - [49] Y. Nenov, I. Pratt-Hartmann, On the computability of region-based euclidean logics, *International Workshop on Computer Science Logic (2010)*, 439-453.
 - [50] Y. Nenov, Computability of Euclidean spatial logics, Ph.D. thesis, 2011, University of Manchester.
 - [51] R. Kontchakov, Y. Nenov, I. Pratt-Hartmann, M. Zakharyashev, On the decidability of connectedness constraints in 2D and 3D Euclidean spaces,(2011) arXiv preprint arXiv:1104.0219.
 - [52] R. Kontchakov, Y. Nenov, I. Pratt-Hartmann, M. Zakharyashev, On the Decidability of Connectedness Constraints in 2D and 3D Euclidean Spaces. *IJCAI 2011*, 957-962.

- [53] R. Kontchakov, Y. Nenov, I. Pratt-Hartmann, M' Zakharyashev: On the Decidability of Connectedness Constraints in 2D and 3D Euclidean Spaces. CoRR abs/1104.0219 (2011).
- [54] R. Kontchakov, Y. Nenov, I. Pratt-Hartmann, M. Zakharyashev, Topological logics with connectedness over Euclidean spaces. ACM Transactions on Computational Logic (TOCL) 14 (2), 16,(2013),1-48.
- **Ivan Prodanov**
- [55] I. Prodanov, An abstract approach to the algebraic notion of spectrum. Proc. Steklov Inst. Math., 154, 1985,(1984), 215-223 (In Russian)).
- [56] I. Prodanov, An axiomatic characterization of the Pontryagin duality. (Unpublished manuscript).
- [57] I. Prodanov, Pontryagin dualities. (Unpublished manuscript).
- [58] I. Prodanov, Convex spaces. Ph.D. thesis, Sofia, 1963.
- [59] I. Prodanov, A generalization of some separation theorems. Compt. Rend. Bulg. Acad. Sci., 17, (1964), 345-348.
- [60] I. Prodanov, Double associative spaces. Annuaire de l'Universite de Sofia "St. Kliment Ohridski", Faculte de Mathematiques et Informatique, Livre 1 - Mathematiques, 57, (1964), 393-422.
- **Jaroslav Tagamlitzki**
- [61] J. Tagamlitzki, On the separation principle in Abelian convex spaces. Izv. Mat. Inst. Bolg. Acad. Nauk, 7, (1963), 402-418, (in Bulgarian).
- **Tinko Tinchev**
- [62] T. Tinchev, Modal approach to region-based theories of space: undecidability of modal definability, 6-th World Congress and School on Universal Logic, June 16 - June 26, 2018, 466.
- [63] Ph. Balbiani, L. Farinas del Cerro, T. Tinchev, D. Vakarelov, Geometrical Structures and Modal Logic. FAPR 1996: 43-57.
- [64] Ph. Balbiani, L. Farinas del Cerro, T. Tinchev, D. Vakarelov, Modal Logics for Incidence Geometries. J. Log. Comput. 7(1), 59-78 (1997).
- [65] Ph. Balbiani, T. Tinchev, Line-based affine reasoning in Euclidean plane, European Workshop on Logics in Artificial Intelligence JELIA 2004, 474-486.
- [66] Ph. Balbiani, T. Tinchev, Line-based affine reasoning in Euclidean plane. Journal of Applied Logic 5, (2007), 421-434.
- [67] Ph. Balbiani, T. Tinchev and D. Vakarelov, Dynamic logic of region-based theory of discrete spaces. Journal of Non-Classical Logic, vol. 17-1, (2007), 39-61.

- [68] Ph. Balbiani, T. Tinchev and D. Vakarelov, Modal Logics for Region-based Theory of Space, *Fundamenta Informaticae*, Special Issue: Topics in Logic, Philosophy and Foundation of Mathematics and Computer Science in Recognition of Professor Andrzej Grzegorzczak 81, (1-3), (2007), pp. 29–82.
- [69] Ph. Balbiani, T. Tinchev, Boolean Logics with Relations. *RelMiCS 2008*, 4-21.
- [70] Ph. Balbiani, T. Tinchev, Complete axiomatizations of modal logics for region-based theories of space, *Logic Colloquium 2009*.
- [71] Ph. Balbiani, T. Tinchev Boolean logics with relations, *The Journal of Logic and Algebraic Programming* 79 (8),(2010), 707-721.
- [72] Ph. Balbiani, T. Tinchev, Definability and canonicity for Boolean logic with a binary relation, *Fundamenta Informaticæ* 129 (4),(2014), 301-327.
- [73] T. Marinov, T. Tinchev, A Logic of Strong Contact Between Polytopes, *arXiv preprint arXiv:1802.08187*, (2016).
- [74] Ph. Balbiani, T. Tinchev, Computability of contact logics with measure, *Logic Colloquium 2019*.
- [75] I. Düntsch, E. Orłowska, T. Tinchev. Mixed algebras and their logics, *Journal of Applied Non-Classical Logics* 27 (3-4), (2017), 304–320.
- [76] T. Tinchev and D. Vakarelov, Logics of Space with Connectedness Predicates: Complete axiomatization, *Advances in Modal Logic 2010*, 434–453, College Publications.
- **Dimitar Vakarelov**
 - [77] D. Vakarelov, Ein aussagenkalkül mit funktoren für "glaubwürdigkeit" und "zweifel" II. *Annuaire de l'Univ. de Sofia, Fac. des math. 1966-1967*, 47-70, vol. 61, Sofia, (1968) (in Bulgarian, abstract in German).
 - [78] D. Vakarelov, Ternare gruppen. *Annuaire de l'Univ. de Sofia, Fac. des math. 1966-1967*, vol. 61, 71-105, Sofia, (1968) (in Bulgarian, abstract in German).
 - [79] D. Vakarelov, Axiome für den n-dimensionalen euklidischen raum. *Annuaire de l'Univ. de Sofia, Fac. des math. 1967-1968*, 273-283, vol. 62, Sofia, (1969) (in Bulgarian, abstract in German).
 - [80] D. Vakarelov, Algebraische grundlagen der zentralen symmetrie, der drehung und der zentralen ähnlichkeit. *Annuaire de l'Univ. de Sofia, Fac. des math. 1968/1969*, 121-166, Sofia, (1970) (in Bulgarian, abstract in German).
 - [81] D. Vakarelov, Dezarguessche systeme. *Annuaire de l'Univ. de Sofia, Fac. des math. 1969-1970*, 227-235, Sofia, (1971) (in Bulgarian, abstract in German).

- [82] D. Vakarelov, Generalized proximity relations in distributive lattices and Boolean algebras. (Unpublished manuskript, in Bulgarian)1977.
- [83] D. Vakarelov, A modal logic for set relations, Abstract, 10-th International Congress of Logic, Methodology and Philosophy of Science, 1995, Florence, Italy, p.183.
- [84] D. Vakarelov, Proximity Modal Logics, In the Proceedings of the 11-th Amsterdam Colloquium, December 17-20, 1997, pp. 301-306. Amsterdam.
- [85] A. Deneva, D. Vakarelov, Modal Logics for Local and Global Similarity Relations. *Fundam. Inform.* 31(3/4), 295-304 (1997).
- [86] D. Vakarelov, I. Duntsch, B. Bennett, A note on proximity spaces and connection based mereology, *Formal Ontology in Information Systems, FOIS 2001*, 139-150.
- [87] I. Duntsch, W. MacCaull, D. Vakarelov, M. Winter: Topological Representation of Contact Lattices. *RelMiCS 2006, Relational and Cleene Algebra in Computer Science, LNCS 4136-2006*, (2006) 135-147.
- [88] D. Vakarelov, Mereotopological representation of Scott and Tarski consequence relations. Invited lecture in: *TANCL07: Workshop on Spatial and Spatio- Temporal Logics*, Oxford, August 5, (2007).
- [89] D. Vakarelov, Region-Based Theory of Space: Algebras of Regions, Representation Theory, and Logics. In: *Mathematical Problems from Applied Logic. New Logics for the XXIst Century. II*. Edited by Dov M. Gabbay et al. *International Mathematical Series*, 267-348, Springer, (2007).
- [90] I. Duntsch, D. Vakarelov, Region-based theory of discrete spaces: A proximity approach. *Ann. Math. Artif. Intell.* 49(1-4), 5-14 (2007).
- [91] I. Düntsch, W. MacCaull, D. Vakarelov and M.Winter. Distributive contact lattices: Topological representation. *Journal of logic and Algebraic Programming* 76 (2008), 18-34.
- [92] D. Vakarelov, A modal approach to dynamic ontology: modal mereotopology, *Logic and Logical Philosophy* 17 (1-2),(2008), 163-183.
- [93] D. Vakarelov, Dynamic mereotopology: a point-free theory of changing regions. I. Stable and unstable mereotopological relations, *Fund. Inform.*, 100(1- 4), (2010),159–180.
- [94] D. Vakarelov, Dynamic mereotopology II: Axiomatizing some Whiteheadean type space-time logics, *Advances in modal logic*. Vol. 9,(2012), 538–558. Coll. Publ., London.
- [95] D. Vakarelov, A Mereotopology Based on Sequent Algebras July 21, 2016 *Journal of Applied Non-Classical Logics*, output 2016, 1–21.
- [96] D. Vakarelov, Dynamic mereotopology. III. Whiteheadean type of integrated point-free theories of space and time. I. *Algebra and Logic*, 53(3)(2014), 191–205.

- [97] D. Vakarelov, Dynamic mereotopology. III. Whiteheadian type of integrated point-free theories of space and time. II. *Algebra and Logic*, 55(1), (2016), 9–23.
- [98] Dimiter Vakarelov. Dynamic mereotopology. III. Whiteheadian type of integrated point-free theories of space and time. III. *Algebra And Logic*, 55(3),(2016), 181–197.
- [99] D. Vakarelov, Actual existence predicate in mereology and mereotopology (extended abstract). In Polkowski, L., Yao, Y., Artiemjew, P., Ciucci, D., Liu, D., Śleżak, D., and Zielosko, B., editors, *Rough Sets. International Joint Conference, IJCRS 2017, Proceedings Part II*, volume 10314 of *LNAI*, (2017), 138–157.
- [100] D. Vakarelov, Mereotopologies with predicates of actual existence and actual contact. *Fund. Inform.*, 156(3-4), (2017), 413–432.
- [101] P. Dimitrov, and D. Vakarelov Dynamic contact algebras and quantifier-free logics for space and time, *Siberian Electronic Mathematical Reports* 15, (2018), 1103–1144.
- [102] D. Vakarelov , Point-free theories of space and time, *Journal of Applied Logics — IfCoLog Journal of Logics and their Applications*, vol. 7, No 6, (2020), 1243-1322. Published also in the book "Selected topics from Contemporary logic", College publications, (2021), 715-794.
- [103] D. Vakarelov, Dynamic Contact Algebras With a Predicate of Actual Existence: Snapshot Representation and Topological Duality, in Ivo Düntsch, Edwin Mares, Editors Alasdair Urquhart on Nonclassical and Algebraic Logic and complexity of proofs, Springer, (2022), 411-476.
- [104] D. Vakarelov, Point-free theories of space, time and causality: a mereotopological approach. (2023). (In preparation).