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Publications

Most recent publications are in the following fields:

- *Linguistics: emergence and evolution of natural languages.*
- *Foundations and mathematical logic.*
- *Quantum computing and quantum information processing.*
- *Theoretical computer science.*
- *Number theory and discrete dynamical systems.*
- *Molecular Biology and Origins of Species.*

Follows the full list of publications, according to, and in the order of the AMS Mathematics Subject Classification 2010.

00A06. Mathematics For Non-mathematicians

• 2009 Discerning the Historical Source of Human Language, in : *FAITH Magazine*, September-October 2009,Vol. 41, N. 5, pp. 10-12 ; an *htm* version can be found on the site : *http://www.faith.org.uk/Publications/Magazines/Sep09/Sep09DiscerningTheHistoricalSourceOfHumanLanguage.htm*
• 2000 Achille et la tortue, par Geneviève Daune-Anglard, dans le quotidien l'Alsace, 28 novembre 2000, p. 25.
• 1997 L'arithmétique des noeuds, in : La science des noeuds, ed. Pierre Cartier, pp. 46-54.
• 1978 La théorie des noeuds, Pour la science N°9, pp. 32-38.
• 1977 Introduction to the 20th century mathematics, Publishing House Znanie, Moscow (in Russian)
• 1976a Finite geometries, Quant *) 1976, n°6, 2-12, Moscow (in Russian, under the pseudonym *Leonard BEVE*).
• 1976b Algebra — Ancient and Modern, Quant 1976, n°10, 24-31, Moscow (in Russian.
• 1975 Knot on the Mathematician's Desk, Quant 1975, n°7, 6-20, Moscow (in Russian).
• 1974a Evaluation of polynomials, Quant 1974, n°7, 29-35, Moscow (in Russian).
• 1974b Arithmetic of colorings of planar graphs, Quant 1974, n°4, 36, Moscow (in Russian).
*) *Quant* (КВАНТ, *in Russian*) *was at that time a high-quality monthly magazine of Ac. Sci. USSR, for students, with circulation of about 400,000 copies.*

00A12. Translations

• 1963-1976 Translation of nine books in mathematics and computer science from English and German to Russian, including, the second volume of Donald Knut's The Art of Programming.

01. History of Mathematics

• 1991 On the Rabbinical exegesis of an enhanced Biblical value of π, Proc. of the 17th Congress of the Canadian Society of History and Philosophy of Mathematics, ed.: H. Grant et al., Kingston, May 1991,. 93-101; revised edition: Preprint March 1992, IRMA, ULP, Strasbourg; a pdf version can be found on my site or on the sites of my colleagues :

*http://www-irma.u-strasbg.fr/~belaga/6*BelagaPi.pdf*
http://www.cs.biu.ac.il/~tsaban/Pdf/belag12.pdf
http://www.math.ubc.ca/people/faculty/israel/bpi/bpi.html

• 1990 On the Enhanced Biblical Value of π, Preprint October 1990, UQAM, Montréal.

00A30. Philosophy of Mathematics
03. Mathematical Logic Foundations / 03E. Set Theory / 03D Computability and recursion theory

• 2012 Mathematical Infinity, Its Inventors, Discoverers, Detractors, Defenders, Masters, Victims, Users and Spectators. *Advancement and Development in Mathematical Sciences*, Volume 1 (2012) , Issue 1 January, pp. 27-72.

•2011 From Traditional Set Theory – that of Cantor, Hilbert, Gödel, Cohen – to Its Necessary Quantum Extension. Institut des Hautes Études Scientifiques, Bures-sur-Yvette (France), IHES/M/11/18 : *http://preprints.ihes.fr/2011/M/M-11-18.pdf*

• 2009d Halfway Up To the Mathematical Infinity IV: Computational or Reasoning Schemata Based on Genuinely Nonlinear Causality Arguments Are Far Beyond the Scope of Most General Genuinely Iterative Procedures Appealing, via Ordinal Analysis, to Existential Criteria Concerning the Class of Countable Ordinals. In coathorship with Kees Van Schenk Brill. Workshop on the Science and Philosophy of Unconventional Computing (SPUC09) March 23-25, 2009 Cambridge. *To appear.*

• 2009c Halfway Up To the Mathematical Infinity III: Broadening the Scope and Elevating the Status of Turing's Halting Logical Concept and Gödel's Incompleteness Methodology. Workshop on the Science and Philosophy of Unconventional Computing (SPUC09) March 23-25, 2009 Cambridge. *To appear.*

• 2009b Halfway Up To the Mathematical Infinity II: Non-Descreteness, Non-Sequentiality, and Non-Locality of Post-Cantorian Transfinite Designs and the Prospectives of Quantum Both Computing and Formal Reasoning. Worskop New Worlds of Computation (NWC '09) January 12, 2009, Orléans, France. *To appear.*

• 2009a Halfway Up To the Mathematical Infinity: On the Ontological and Epistemic Sustainability of Georg Cantor's Transfinite Design. A pdf version can be found on the sites :

http://arxiv.org/abs/0812.3207
http://philpapers.org/profile/2443

• 2008 Mathematical Infinity, Its Inventors, Discoverers, Detractors, Defenders, Masters, Victims, Users, and Spectators. Preprint 2000/027 IRMA Srasbourg. *Submitted*. A pdf version can be found on the sites :

*http://www-irma.u-strasbg.fr/~belaga/4*MathInfinity.pdf*
http://hal.archives-ouvertes.fr/hal-00129653

French Translation : *L'infini mathématique, ses inventeurs, découvreurs, détracteurs, maîtres, victimes, utilisateurs et spectateurs*. ***In:*** *L'Ouvert* **100-101**, September 2000, pp. 69-85; a pdf

version can be found on the sites :

*http://www-irma.u-strasbg.fr/~belaga/a3*BelagaL_OuvertInfiniMath2000.pdf*

http://irem.u-strasbg.fr/php/articles/100_101_InfiniMath2.pdf

• 2001 Post-Hilbertian Programme and Its Post-Gödelian Stumbling Block. II : Logical, Phenomenological, and Philosophical Limits of the Set-Theoretical Quest for Mathematical Infinity, *Logic Colloquium 2000*, July 23-31, Sorbonne, Paris. ***Abstract in :*** *Bulletin of Symbolic Logic* **7**, n°1, March 2001, p. 100.

• 1998 Post-Hilbertian Programme and Its Post-Gödelian Stumbling-Block. I, *Association for Symbolic Logic* 1997-1998 Annual Meeting, May 22-25, Toronto, Canada. ***Abstract in*** : *Bulletin of Symbolic Logic* **4**, n°4, Dec. 1998, pp. 449-450.

• 1996 Mathematical Infinity, Preprint 96/08 July 1996, L.S.I.I.T., ULP, Strasbourg.

• 1991 Are we really living in the world where the Power-Set Axiom is a universal mathematical truth ? *Proc. of the 17th Congress of the Canadian Society of History and Philosophy of Mathematics*, ed.: H. Grant et al., Kingston, May 1991.

• 1990 On the Probable Failure of the Uncountable Power Set Axiom, December 1990, Extended Abstract, Preprint May 1991, UQAM, Montreal.

• 1988 The Power-Set Axiom. Preprint April 1988, IRMA, ULP, Strasbourg.

03B65. Logic of Natural Languages. Also: 68T50. Natural Language Processing — 91F20. Linguistics.

• 2014c Interpreting Semitic Protolanguage as a Conlag, or Constructed Language, I. *US-China Foreign Language* March 2014, Vol.12, n°3.

• 2014b Fine -Tuning the Blueprint of the Verbal Structure of Biblical Hebrew. *ICHoLS XIII* — UTAD/CEL, Vila Real, Portugal, 25–29 August 2014.

• 2014a Interpreting Semitic Protolanguage as a Conlag – Constructed Language. *Global Journal of Human Social Sciences: G, Linguistics & Education.* Vol. 13 :1, pp. 31-37.

• 2008c In the Beginning Was the Verb: The Emergence and Evolution of Language Problem in the Light of the Big Bang Epistemological Paradigm. Submitted. Published in:

— *Rivista di Filologia Cognitiva* (*Cognitive Philology*), vol. 1, n° 1, 2008:

http://fccl.ksu.ru/issue10/BelagaLinguaInTheBeginning_080312.pdf

— *Web Journal of Formal, Computational, and Cognitive Linguistics*, Issue 10, January 2008:

http://padis2.uniroma1.it:81/ojs/index.php/cogphil/article/view/2012/1973

The last pdf version can be found on the site :

BelagaLingua/BelagaLinguaInTheBeginning_080324.pdf

• 2008b Fine-Tuning the Blueprint of the Verbal Structure of Biblical Hebrew. Paper accepted for *the International Conference on the History of the Language Sciences*, **ICHoLS XI**, Potsdam, Germany, August 28th-September 2nd 2008. A pdf version of the Abstract can be found on the site :

BelagaLingua/BelagaAbstractFine-Tuning080130.pdf

• 2008a Emergence and Evolution of Natural Languages: New Mathematical & Algorithmical Perspectives. Paper accepted for *the International Conference on Language, Communication and Cognition*, Brighton, UK, August 4-7, 2008. A pdf version of the Abstract can be found on the site :

BelagaLingua/BelagaAbstractBrighton4-7Aug2008.pdf

• 2007 Biblical Hebrew, Fossil of an Extinct Proto-Language. Preprint July 2007, IRMA, ULP, Strasbourg; a pdf version can be found on the site :

BelagaLingua/BelagaHebrewFossil070723.pdf

05C. Graph theory

• 2001 Mod 3 Arithmetic over Triangulated Riemann Surfaces, *International Workshop on Combinatorics and Computer Science*, September 15-18, 2000, Palaiseau. *Theoretical Computer Science* **263**, pp. 123-137; a pdf version can be found on the sites :

*http://www-irma.u-strasbg.fr/~belaga/9*Mod3Arithmetic.pdf*
http://www.sciencedirect.com/science/journal/03043975
http://hal.archives-ouvertes.fr/hal-00129632

• 1989 F3-arithmetic over triangulations of Riemann surfaces, Preprint March 1989; IRMA, ULP, Strasbourg. ***Abstract in :*** *Proc. of the Fifth SIAM Conference on Descrete Math.*, Atlanta, June 1990.
• 1983 Arithmetic of planar triangulations, Preprint January 1983, IRMA, ULP, Strasbourg.
• 1976 On Heawood vectors of pseudotriangulations, *Soviet Math. Dokl.* **17**, 6 (1976), 1494-1498.
• 1974 On coloring the graph of a triangulation of an n-sphere, *Usp. Math. Nauk* **28**, 6 (1974) 191-192 (in Russian).
• 1972 A new interpretation of the four colour-problem, *Usp. Math. Nauk* **27**, 3 (1972) 191 (in Russian).

11-04. Number Theory and 20-04. Group Theory

• 1976 *Calculations in abstract algebra and number theory, Survey*, Publish. House MIR, 1976, 1-305 (in Russian).
• 1975 An algorithm and program for computation of continued fractions (in co-athorship with A. Alexandrov), Preprint 1975, *Institute of Control Problems*, Moscow.

11K31. Number Theory

• 2006c The Collatz Problem and Its Generalizations: Experimental Data. Table 2. Factorization of Collatz Numbers $2^\ell-3^k$ (in co-athorship with Maurice Mignotte), Preprint I.RMA., ULP, Strasbourg ; a pdf version can be found on the sites :

*http://www-irma.u-strasbg.fr/~belaga/a6*BelagaMignotteCollatzTable02_060704.pdf*
http://hal.archives-ouvertes.fr/hal-00129730

• 2006b The Collatz Problem and Its Generalizations: Experimental Data. Table 1. Primitive Cycles of $(3n+d)-$mappings (in co-athorship with Maurice Mignotte), Preprint I.RMA., ULP, Strasbourg; a pdf version can be found on the sites :

*http://www-irma.u-strasbg.fr/~belaga/a5*BelagaMignotteCollatzTable01_060719.pdf*
http://hal.archives-ouvertes.fr/hal-00129727

• 2006a Walking Cautiously into the Collatz Wilderness : Algorithmically, Number-Theoretically, Randomly (in co-athorship with Maurice Mignotte), *Fourth Colloquium on Mathematics and Computer Science*, Nancy, September 18-22, 2006, *DMTCS proc. AG*, 2006, pp. 249–260; a pdf version can be found on the sites :

*http://www-irma.u-strasbg.fr/~belaga/a4*BelagaWalkingCollatz060730.pdf*
http://www.dmtcs.org/dmtcs-ojs/index.php/proceedings/article/viewFile/dmAG0117/1694
http://hal.archives-ouvertes.fr/hal-00129726

The slide show of the presentation at the Colloquium, September 20, 2006, can be found on the site:

*http://www-irma.u-strasbg.fr/~belaga/a8*BelagaMathInfo06Presentation060920.ppt*

• 2003 Effective Polynomial Upper Bounds to Perigees and Numbers of (3x+d)-Cycles of a

Given Oddlength, Acta Arithmetica 106.2, 197-206; a pdf version can be found on the sites :

*http://www-irma.u-strasbg.fr/~belaga/7*BelagaActaArith2003-106-2.pdf*
http://journals.impan.gov.pl/cgi-bin/aa/pdf?aa106-2-09
http://hal.archives-ouvertes.fr/hal-00129652

• 2000 Cyclic Structure of Dynamical Systems Associated with 3x+d Extensions of Collatz Problem (in co-athorship with Maurice Mignotte), Preprint I.RMA., ULP, Strasbourg; a pdf version can be found on the sites :

*http://www-irma.u-strasbg.fr/~belaga/3*CyclicStructure.pdf*
http://hal.archives-ouvertes.fr/hal-00129656

• 1999b Reflecting on the 3x +1 Mystery. Outline of a Scenario - Improbable or Realistic ? Preprint I.RMA., ULP, Strasbourg. *Proceedings of International Conference on the Collatz Problem and Related Topics*, August 5-6, 1999, Katholische Universität Eichstätt, GERMANY; a pdf version can be found on the sites :

*http://www-irma.u-strasbg.fr/~belaga/1*Belaga(3x+1)Mystery.pdf*
http://hal.archives-ouvertes.fr/hal-00129576

• 1999a Calculating Primitive 3x +d Cycles. *Proceedings of International Conference on the Collatz Problem and Related Topics*, August 5-6, 1999, Katholische Universität Eichstätt, GERMANY.

• 1998 Embedding the 3x+1 conjecture into a 3x+d context (in co-athorship with Maurice Mignotte), *Experimental Mathematics* **7**, n. 2, 145-151; a pdf version can be found on the sites :

*http://www-irma.u-strasbg.fr/~belaga/a9*BelagaExperimentalMath1998.pdf*
http://projecteuclid.org/Dienst/Repository/1.0/Disseminate/euclid.em/1048515662/body/pdf (A ps version can be found on the site of the Experimental Mathematics (a permission is necessary).

• 1994 Probing into the 3x+d world, Preprint 95/03, C.N.R.S., ULP, Strasbourg.

34C. Qualitative Theory Of Ordinary Differential Equations

• 1965 Neighborhood of a conditionally periodic solution, Dr. Ph. Thesis, 1965, Moscow State University

• 1962 The reducibility of a system of ordinary differential equations in the neighborhood of a conditionally periodic motion, *Soviet Math. Dokl.* **3** (1962) 360-363.

57M. Low-dimensional topology and 68U05. Visualization

• 2002 Plot-and-Patterning Theory in Computer Graphics and Computer Animation II, Preprint I.RMA., ULP; a pdf version can be found on the site :

*http://www-irma.u-strasbg.fr/~belaga/5*BelagaPlot&Pattering2002.pdf*

• 1999 Cobordism as a Basic Topological Paradigm of Virtual Computer Animation, Preprint I.RMA., ULP, Strasbourg; a pdf version can be found on the sites :

*http://www-irma.u-strasbg.fr/~belaga/2*BelagaCobordisms1999.pdf*
http://hal.archives-ouvertes.fr/hal-00129631

• 1997 Plot-and-Patterning Theory in Computer Graphics and Computer Animation I, *CISST- PDPTA'97*, Las Vegas, June 30- July 3, 1997; in : *PDPTA'97 Proceedings*, **Vol. 3**, pp. 1473-1481.

• 1996 Computer Animation Strategies and Basic Topological Paradigms, Technical Report 96/12, L.S.I.I.T., ULP; in : eds. A. Luciani, C. Secroun, *Proceedings of Cinquième séminaire sur Animation et Simulation*, Reims, 6-7 March 1997, pp. 9-34.

• 1978 La théorie des noeuds, *Pour la Science*, Paris, 1978, n°9, 58-67; reprinted in 1997

under the title *L'arithmétique des noeuds*, in : *La science des noeuds*, ed. Pierre Cartier, pp. 46-54.

68Q25. Analysis and complexity of algorithms

• 2003 Algebra Univesalis Constructiva : Classical and Quantum Circuits Computing over Universal Algebras, Manuscript, I.RMA., ULP, Strasbourg.
• 2001 New Lower Bounds to Concatenation Words Complexity, Manuscript I.RMA., ULP, Strasbourg.
• 1998 Concatenation Words Complexity, 41the Séminaire Lotharigien de Combinatoire, Mars 1998, Strasbourg.
• 1997 Words chain complexity, *International Workshop on Combinatorics and Computer Science*, September 15-18, Palaiseau, France.
• 1992 Assembling all m-length words over a finite alphabet by a single words chain, II, Preprint March 1992, IRMA, ULP, Strasbourg.
• 1991 Auto-pipelining in a feedback-free computational environment, Extended Abstract, *Proc. of the Canadian Conference on Electrical and Computer Engineering*, Québec, September 1991, **Vol 2**, pp. 36.2.1-3.
• 1990b Assembling all m-length words over a finite alphabet by a single words chain, Preprint March 1990, UQAM, Montréal.
• 1990c On the diffuculty of computing linear transforms, Extended Abstract, *Proc. of the Fifth SIAM Conference on Descrete Mathematics*, Atlanta, USA June 1990.
• 1990d On the diffuculty of computing linear transforms, Part 1: Strong mincing rank of a matrix over a field, Preprint UQAM Montréal, February 1990.
• 1989 Through the mincing machine with a Boolean layer cake: Nonstandard computations over Boolean circuits in the lower-bounds-to-circuit-size complexity proving, *Acta Informatica* **26** (1989) 381-407.
• 1988a Bilinear mincing rank, *Theoretical Computer Science* 61 (1988), 299-306.
• 1988b Monoid of sequential and parallel processings over a circuit, Preprint, IRMA-CNRS, ULP, Strasbourg.
• 1987a An axiomatic approach to lower bounds problems in computational complexity, *Logic Colloquium '85*, July 1985, Paris; ***Abstract in :*** *Journal Symb. Logic* **52** (1987) 307.
• 1987b Constructive universal algebra: an introduction, *Theor. Comput. Sci.* **51** (1987), 229-238.
• 1986a Size complexity of parallel processings over circuit, Preprint September 1986, IRMA, ULP, Strasbourg.
• 1986b Fast computation of functions over arbitrary universal algebras, *Proceedings of the International Conference on Computer Science*, December 1985, Grenoble; **in :** ed. P. Chenin et al., *Computers and Computing*, John Wiley - Masson, 1986, pp. 119-123.
• 1985a Circuits linéaires calculant des transformations linéaires, *C. R. Acad. Sc. Paris* **301**, 2 (1985), 53-56.
• 1985b Fast computation of linear operators over arbitrary rings, *Proc. AAECC-3*, Grenoble, July 1985, *LNCS* **229**, Springer 1986, pp. 238-246.
• 1985c Algebra universalis constructiva: introductio, *Proc. of the VII Latin Mathematical Congress*, Coimbra, September 1985.
• 1984a Straight-line linear algebra, Preprint September 1984, IRMA., ULP, Strasbourg.
• 1984b New lower bounds to circuits complexity, Preprint May 1984, IRMA, ULP, Strasbourg. ***Abstract in :*** *Proc. of the International Congress on Computational and Applied Mathematics*, Leuven, July 1984.
• 1984c Locally synchronous complexity in the light of the trans-box method, *Proc. STACS*

'84, Paris, Avril 1984, *LNCS* **166**, Springer 1984, pp. 129-139.
• 1984d Constructive linear algebra, Preprint January 1984, IRMA, ULP, Strasbourg.
• 1983a A new look at a circuit as a model for parallel and sequential computations, Preprint November 1983, IRMA, ULP, Strasbourg.
• 1983b (with Maurice Mignotte) The trans-box proving scheme for lower bounds to combinational complexity, *Proc. of Ecole de Printemps d'Informatique Théorique et Algorithmique*, Ile de Ré, May 1983.
• 1983c Through the mincing machine with a layer cake, TRs: Part 1, Boolean functions and algorithms - Avril 1983; Part 2, Arithmetic algorithms - September 1983; Part 3, Linear functions and algorithms - October 1983; IRMA, ULP, Strasbourg.
• 1983d The trans-box method fundamentals, TRs: Part 1 - January 1983; Part 2 - February 1983; Part 3 - March 1983; IRMA, ULP, Strasbourg.
• 1978a Protoschemes of algorithms, *Proc. of the FCT-Conference*, Poland, September 1977, *LNCS* **56**, Springer, 1978, pp. 361-366.
• 1978b An analysis of protoschemes of algorithms, *Soviet Math. Dokl.* **19**, 5 (1978) 1117-1121.
• 1976a The additive complexity of a natural number, *Soviet Math. Dokl.* **17**, 1 (1976), 5-9.
• 1976c The additive complexity of a natural number as a mesure of information, ***Abstract in :*** *Proc. of the Fourth International Symposium on Information Theory*, Leningrad, Juny 1976, **Vol. 1**, p. 20-21 (in Russian).
• 1961 Evaluation of polynomials of one variable with preprocessing of coefficients, in: ed. A. A. Lyapunov, *Problems of Cybernetics*, **Vol. 5**, Pergamon Press,1964, pp. 1-13.
• 1958 Some problems involved in the calculation of polynomials, *Dokl. Akad. Nauk SSSR* **123** (1958), 775-777 (in Russian).

68N. Theoretical software development

1976 Operating system for an analog-digital computer (in co-athorship with A. Bitman, V. Deza, A. Uskov), 1972-1976, *Institut of Control Problems*, Moscow.

81P68. Quantum computation and quantum cryptography

• 2009b Water as a Quantum Computing Device, in coathorship with Daniel Grucker, Tarek Khalil, Jean Richard, and Kees van Schenk Brill. Unconventional Computation: 8th International Conference (UC 2009), Ponta Delgada, Portugal, September 7-11, 2009. Published in *Lecture Notes in Computer Science / Theoretical Computer Science and General Issues*, Springer, Berlin. Eds by Christian S. Calude (Editor), Jose Felix Gomes da Costa (Editor), Nachum Dershowitz (Editor), Elisabete Freire (Editor), Grzegorz Rozenberg (Editor)., LNCS 5715, p287, 2009.
• 2009a Quantum Continuum: Physical, (Meta-)Mathematical, Algorithmic Evidence, in coathorship with Daniel Grucker, Tarek Khalil, Jean Richard, and Kees van Schenk Brill. Workshop New Worlds of Computation (NWC '09), January 12, 2009, Orléans, France. *To appear in : International Journal of Unconventional Computing*.
• 2008 Machine de Turing Quantique et son implémentation en RMN liquide, Poster, Grand Colloque STIC 2007, en collaboration avec Daniel Grucker et Kees van Schenk Brill, 5-7 novembre 2007, Paris, Cité des Science, La Villette. A pdf version can be found on the site:
http://www-irma.u-strasbg.fr/~belaga/BelagaQuantumComputing/BelagaPosterOrdiQuantique071112.pdf
• 2007 Nuclear spin interferences in bulk water at room temperature, in co-athorship with Daniel Grucker, Jules Grucker, Kees Van Schenk Brill, Jacques Baudon. *International*

Journal of Pure and Applied Mathematics, vol. 42, n° 2, 241-247, 2008. A pdf version can be found on the sites :

http://fr.arxiv.org/abs/physics/0703270
http://hal.archives-ouvertes.fr/hal-00133055/en/
http://www-irma.u-strasbg.fr/~belaga/BelagaQuantumComputing/BelagaNuclearSpinInterferences070222.pdf

• 2003 Implementation of Quantum Computing Algorithms on a Nuclear Magnetic Resonance Quantum Computer Based on Polarized Solid 129Xe., in co-athorship with Daniel Grucker, Preprint I.RMA., ULP, Strasbourg; a pdf version can be found on the sites :

*http://www-irma.u-strasbg.fr/~belaga/8*BelagaGruckerQuComp040526.pdf*
http://hal.archives-ouvertes.fr/hal-00129697

90A. Mathematical Economics

• 1968a Optimal control in a two-sectors economy (in co-athorship with Vladimir Kormer), *Economics and Mathematical Methods* **4**, 3 (1968) 335-341 (in Russian).

• 1968b Methods of Pontryagin optimization in economic models, Preprint 1968, Central Economico-Mathematical Institute of Ac. Sci. USSR (in Russian).

92. Biology and other natural sciences

• 2008 Francis Crick and the missing Biblical rib. Definitive version: revised and submitted. Preprint I.RMA., ULP, Strasbourg; a pdf version can be found on the sites :

http://www-irma.u-strasbg.fr/~belaga/BelagaCrickMissRib080408.pdf
http://philpapers.org/profile/2443

• 2007a Understanding and mastering modern science — In the spirit of the long overdue awareness : theological in its nature, ontological in its aspirations, epistemological in its implications. Preprint I.RMA., ULP, Strasbourg; a pdf version can be found on the site :

http://halshs.archives-ouvertes.fr/halshs-00166259
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• 2007b Francis Crick and the missing Biblical rib. Full version. Preprint I.RMA., ULP, Strasbourg; a pdf version can be found on the sites :

http://hal.archives-ouvertes.fr/hal-00163689
http://www-irma.u-strasbg.fr/~belaga/BelagaCrickMissRib070504.pdf

• 2005a Francis Crick and the missing Biblical rib : A showcase for the epistemological thesis of scientist's honourable creative vulnerability. Preprint I.RMA., ULP, Strasbourg; a pdf version can be found on the site :

*http://www-irma.u-strasbg.fr/~belaga/a1*BelagaCrickMissingRib.pdf*