Anatolij Dvurečenskij
Professor Beloslav Riečan, septuagenarian

PROFESSOR BELOSLAV RIEČAN,
SEPTUAGENARIAN

On November 10, 1939, in Žilina, Slovakia, a small boy, called by his parents Belko, was born, and who for many years is known as Prof. RNDr. Beloslav Riečan, DrSc. The Fates gave him many gifts but also many stickers: being four and half his beloved mother passed away, being six his eight-year brother Horislav died, too, and in autumn 1994, his firstborn daughter Hanka, a very gifted mathematician, died in the result of a car accident in Austria. Fortunately, other Fates gave him also very scarce gifts: love to maths, love to music, and the most important gift — love to people, which helped him very deeply during his whole life and such Belo is known by the most among us, his students, colleagues and friends.

After the mother death the family moved from Púchov to Banská Bystrica where he attended the primary school, and a very famous high school, Gymnázium of Andrej Sládkovič, which had a very great influence on the young soul of Belo. This high school attended by many important personalities of the science, culture and social life of Slovakia. Young Riečan absorbed through all his pores the unique atmosphere of Banská Bystrica. In persons of Moyzes and Kuzmány, he is discovering a fascinating possibility of the tolerance for the development of Slovakia, and from which he is able always successfully to draw, which is very significant in his full age. Belo was one of the best students, he was excellent in maths and in playing piano and pipe organ; he became even an organist in a protestant church in Banská Bystrica. Young students used to meet in his father's flat where they discussed with a great ignition about everything, declaimed verses, and a pet, an old duck, was listening still. As a student, Belo won an All-Slovakian competition for young pianists which caused him a big head ache: it was necessary to choose between a career of a pianist or of a mathematician. He preferred mathematics, which has had a great influence on Slovak maths.

In 1953, Belo arrived to Bratislava, where he attended the Faculty of Natural Science of Comenius University. Here he had excellent teachers who belong to the first generation of the Slovak Mathematicians: Acad. Jur Hronec, Profs O. Borůvka, M. Greguš, A. Huťa, M. Kolibiar, T. Neubrunn, J. Srb, M. Sypták, T. Šalát, V. Šeda and others. His school-class was one of the best in the history; his fellow-students became a decoration of the Slovak mathematical society: Profs P. Brunovský, A. Dávid, J. Gruska, P. Kluvánek, Z. Petrovičová-Riečanová, J. Moravčík, M. Franek, Z. Zalabai.

During his studies he wired to scientific activity under the guidance of Prof. M. Kolibiar and immediately his first paper *On axiomatic of modular lattices*, Acta Fac. Rer. Nat. Univ. Comenianae, Math. **2** (1957), 257–262 (in Slovak), was a top hit. This paper was quoted in monographs of G. Birkhoff, L. A. Skornjakov and G. Grätzer. Every specialist of lattice theory knows very well how a great distinction for the author are such quotations in these three fundamental books. Today, when one takes one's stand on CC-publications and SCI-quotations it is wonderful, how these mathematical giants could quote this paper, although it was written in Slovak and in a non-current journal.

PROFESSOR BELOSLAV RIEČAN — SEPTUAGENARIAN

After finishing his studies in 1958, he started to work at the Department of Mathematics of the Slovak Technical University, Bratislava. In 1962-64 he was a PhD-student of Prof. Štefan Schwarz, another giant of the Slovak maths. In 1965 he was the Associated Prof., and he started to give lectures also at Faculty of Natural Sciences of Comenius University, where he later started to read lectures also to the author of these lines. In 1979 he defended the scientific degree DrSc., and in 1981 he was appointed as the University Professor. From 1972 he worked at this Faculty, and in 1985 he moved to Liptovský Mikuláš, to the Department of Mathematics of the Military Academy to come back in 1989 to Faculty of Mathematics and Physics, Bratislava, as the first willingly elected Dean. Since 1992 he was the Director of Institute of Mathematics of the Slovak Academy of Sciences, and since 1998 he is back in the city of his youth, Banská Bystrica, where since October 2001 he is at the Math. Department, Faculty of Natural Sciences of the University of Matej Bel.

Prof. Riečan belongs to the most important mathematicians of Slovakia. He is the author or coauthor of 6 monographs, 192 papers published in scientific journals, 77 technical papers, 5 university textbooks, 71 high-school textbooks and text tools, 9 scripts, 11 books on mathematics, 7 tv-scripts, over 430 publicists articles.[1] His papers were quoted in more than 500 articles. He was a PhD-supervisor of 22 PhD-students, which is a Slovak unique, and he was a supervisor of over 50 diploma-theses. Many of his former students are nowadays leading personalities of our universities and of the Slovak Academy of Sciences. His professional activity is probability theory, measure theory and integration, fuzzy sets, and quantum structures. His activities are very large and reach even besides of maths, he is a member of 6 international scientific societies.

Among his most important mathematical contributions we can surely insert establishing unifying theory of measure and integration in ordered spaces. He extended the notion on entropy of dynamical systems. He initiated study of quantum structures and fuzzy sets in Slovakia. He developed probability theory of fuzzy sets. That has a very important connection to probability theory on MV-algebras. He is very often invited to address his talks on many conferences in home as well as in abroad.

He is a tireless organizer of many scientific events; many of traditional scientific conferences in Slovakia or seminars have arose due to his direct personal stimulus. Thanks to him, in Liptovský Ján Valley an important mathematical congress centrum had appeared, which became soon very well known among foreign colleagues; as a rule, a concert of conference participants is regularly organized, which is always highly welcome. He is a long-standing officer of the Union of Slovak Mathematicians and Physicists, he is the Head of the Slovak Association of Rome Club. As an outstanding musician and musical expert, since 1984 together with an important Slovak musician Prof. Roman Berger are guiding the Seminar Mathematics and Music, and around this seminar a circle of Slovak, Czech as well as foreign intellectuals is concentrated. He is a fanatic propagator of Slovak books, namely of mathematical ones, and he is a mathematical modern version of Matej Hrebenda (M. Hrebenda, 1796–1880, was a famous blind propagator of Slovak books).

On pages of daily press, on TV-screen and radio he is trying on uplift of the education in Slovakia, he is voicing to momentous questions of education, science, culture and clergy in our society, and to acute questions of collaboration between universities and Slovak Academy of Sciences. His scientific, pedagogical, organizing activity was many time awarded on many important national and international platforms. I mention only the latest ones: Honorary Medal of Bernard Bolzano of the Academy of Sciences of the Czech republic (1998), the Silver Medal

---

[1]The list of his first 122 publications and the list of monographs can be found in Tatra Mt. Math. Publ. **10** (1997), in publications 119 122 only pages were completed.

of University of Milano (2000), and Medal of the Slovak Academy of Sciences for support for science (2001), member of the Learning Society of the Slovak Academy of Sciences, 2005, Dr.H.C. of the Military Academy, Liptovský Mikuláš, 2006, the grant for the most successful PhD tutors, 2006.

All these outstanding scientific degrees which Prof. Riečan achieved are very important and needful, however they do not reflect the main feature of his own. And this is his interest for the man, for the pupil and student, which very often borders on self-sacrifice, and which is very typical for him. Not once I had opportunity to see him how he already as a known professor made contact with young adepts of maths. Or how he was carrying on his back the books and offering them to people. Thanks for that he induced interest for maths in many young novices while his sparks are very susceptible. In addition, he has a gift to put people together for the well of matters and he is not shaming to let enlighten himself by younger colleagues. I did not yet understood where he takes so much energy and so much ideas.

Dear Belo, you are a genuine spiritus mathematicus slovakiensis and therefore we wish you on the occasion of your important life event good health, happiness and many new interesting mathematical results and new ideas on organizing mathematical life.

Ad multos annos, spiritus mathematicus!

Anatolij Dvurečenskij

LIST OF PUBLICATIONS OF BELOSLAV RIEČAN

Research papers

[118] *On the product of semigroup valued measures*, Tatra Mt. Math. Publ. **10** (1997), 17 27 (with M. Duchoň).

[119] *On the convergence of observables in D-posets*, Tatra Mt. Math. Publ. **12** (1997), 7 12.

[120] *Moment problem in some ordered vector spaces*, Tatra Mt. Math. Publ. **12** (1997), 247–252 (with C. Debiève and M. Duchoň).

[121] *g-entropy of dynamical systems*, Tatra Mt. Math. Publ. **12** (1997), 183-190 (with J. Rybárik).

[122] *Weak law of large numbers for weak observables in MV algebras*, Tatra Mt. Math. Publ. **12** (1997), 221–228 (with M. Jurečková).

[123] *On the joint observable and the joint distribution in product MV algebras*, Busefal **76** (1998), 58–65.

[124] *On some properties of S-decmposable measures*. In: Proc. of EUFIT'99, 7th European Congress on Intelligent Techniques and Soft Computing, Aachen, Germany, september 13 16, 1999, Wissenschaftverlag, Aachen, 1999 (on CD-ROM).

[125] *On the entropy of T-fuzzy dynamical systems*, Busefal **80** (1999), 9–13 (with J. Petrovičová).

[126] *On the product MV algebras*, Tatra Mt. Math. Publ. **16** (1999), 143–150.

[127] *On a lattice of tetrachords*, Tatra. Mt. Math. Publ. **16** (1999), 283–294 (with J. Haluška).

[128] *On the Choquet integral for Riesz space valued measure*, Tatra Mt. Math. Publ. **19** (2000), 75–90 (with M. Duchoň and J. Haluška).

[129] *On the probability on BL algebras*, Acta Math. Nitra **4** (2000), 3 13.

[130] *On the Lp-space of observables on product MV algebras*, Internat. J. Theoret. Phys. **39** (2000), 851–858.

[131] *On the probability theory on MV algebras*, Soft Comput. **4** (2000), 49 57.

[132] *Kolmogorov-Sinaj theorem on generators for T-fuzzy dynamical systems*. In: Eight Internat. Conf. Information Processing and Management of Uncertainty, vol. I, Consejo superior de investigaciones científicas, Madrid, 2000, pp. 69 73 (with J. Petrovicová).

[133] *On the joint distribution of observables*, Found. Phys. **30** (2000), 1679 1686.

[134] *On the individual ergodic theorem in D-posets of fuzzy sets*, Czechoslovak Math. J. **50(125)** (2000), 673 680.

[135] *Entropy of dynamical systems*. In: ROBUST'2000, Praha, Jednota ceských matematiku a fysiků, Praha, 2000, pp. 244–246.

[136] *Almost everywhere convergence in MV-algebras with product*, Soft Comput. **5** (2001 , 396 399.

[137] *Group-valued measures and probability on MV-algebras*. In: Reports on Analysis (J. Jendrzejewski, ed.), 2001, pp. 109–115.

[138] *On the Hudetz type modification of g-entropy*. In: Uncertainty Modelling'2001, Stavebná fakulta STU, Bratislava, 2001, pp. 24 29.

[139] *A note on the improper Kurzweil-Henstock integral*, Acta Univ. Math. Belii **9** (2001 , 7 12 (with A. Boccuto).

[140] *On a Banach space valued observables*, Tatra Mt. Math. Publ. **24** (2002), 109 115.

[141] *A note on improper Kurzweil-Henstock integral in Riesz spaces*, Acta Math. Nitra **5** (2002), 15–24 (with A. Boccuto).

[142] *On the Yager entropy of dynamical systems*, Acta Math. Nitra **5** (2002), 1 14.

[143] *On the g-entropy and its Hudetz correction*, Kybernetika **38** (2002), 493 500.

[144] *A note on the improper Kurzweil-Henstock integral in Riesz Spaces*, Acta. Math. Nitra **5** (2002), 15–24 (with A. Boccuto).

[145] *Free product of MV-algebras*, Atti Sem. Mat. Fis. Modena **50** (2002), 173 186.

[146] *Almost everywhere convergence in MV-algebras*, Soft Comput. **5** (2002), 396 399.

[147] *Free product of MV-algebras*, Atti Sem. Mat. Fis. Univ. Modena **50** (2002), 173 186.

[148] *A note on ergodic transformations on MV-algebras*. In: Proc. 9th Intern. Conf. Information Processing and Management of Uncertainty Knowledge Based Systems, vol. II (B. Bouchon Meuniere, ed.), Universite de Savoi, Annecy, 2002, pp. 1099 1001.

[149] *On multivalued logic and probability theory*. In: Soft Methods in Probability, Statistics and Data Analysis (P. Grzegorzewski et al., eds.), Physica-Verlag, New York, 2002, pp. 134–136.

[150] *An entropy construction inspired by fuzzy sets*, Soft Comput. **7** (2003), 486 488.

[151] *A descriptive definition of the probability on intuitionistic fuzzy sets*. In: EUSFLAT'2003 (M. Wagenecht, R. Hammpel, eds.), Univ. Appl. Sci., Zittau-Goerlitz, 263 266.

[152] *Entropy and the common refinement of partitions*. In: AGOP 2003, 141 144 (with J. Petrovicová).

[153] *Kurzweil-Henstock integral with values in metric semigroups*. In: Reports on Real Analysis (J. Jedrzejewski, ed.), 2003, pp. 173 174.

[154] *Representation of probabilities in IFS events*. In: Soft Methodology and Random Information Systems (Lopez-Diaz et al., eds.), Springer, Berlin, 2004, pp. 243 248.

[155] *A note on a Pettis-Kurzweil-Henstock type integral in Riesz spaces*, Real Anal. Exchange **28** (2003/2004), 153 161 (with A. Boccuto).

[156] *Probability on MV-algebras.* In: Handbook of Measure Theory, vol. II (E. Pap., ed.), 2001, pp. 869 910 (with D. Mundici).

[157] *On the conjugacy of Boolean algebras and MV-algebras,* Tatra Mt. Math. Publ. **27** (2003), 231 236.

[158] *On the strong law of large numbers on some ordered structures,* Math. Slovaca **54** (2004), 61 67.

[159] *On the Henstock integral for functions with values in Riesz spaces,* Czechoslovak Math. J. **54(159)** (2004), 591 607 (with A. Boccuto).

[160] *Extension theorem for subadditive measures in MV-algebras.* In: Proc. Tenth Internat. Conf. IPMU 2004, vol. 3, pp. 1801 1805.

[161] *On the law of large numbers on IFS events.* In: Advances in Soft Computing, Berlin, Springer, pp. 677–680.

[162] *Weak law of large numbers for IF-events.* In: Current Issues in Data and Knowledge Engineering (B. De Baets et al., eds.), EXIT, Warzsawa, 2004, pp. 309 314 (with K. Lendelová).

[163] *On the Dobrakov submeasure on fuzzy sets,* Fuzzy Sets and Systems **151** (2005), 635 641.

[164] *The conjugacy of probability MV-σ-algebras with the unit interval,* Atti Sem. Mat. Fis. Univ. Modena e Reggio Emilia **52** (2004), 241 148.

[165] *On invariant observables and the individual ergodic,* Internat. J. Theoret. Phys. **44** (2005), 1587 1597 (with M. Jurečková).

[166] *Kolmogorov-Sinaj entropy on MV-algebras,* Internat. J. Theoret. Phys. **44** (2005), 1041 1052.

[167] *Generalized net model with intuitionistic fuzzy estimation of the process of obtaining of scientific titles and degrees,* Notes IFS **11** (2005), 95–114 (et al.).

[168] *On the classification of musical objects,* Begatenforderung in MINT **12** (2005), 121 127 (with J. Petrovičová and P. Šidlík).

[169] *Few views to the mathematics of randomness,* Begatenforderung in MINT **12** (2005), 71 80.

[170] *On a problem of Radko Mesiar: general form of IF-probabilities,* Fuzzy Sets and Systems **157** (2006), 1485–1490.

[171] *On central limit theorems on IFS-events,* Mathware Soft Comput. **12** (2005), 5 14 (with J. Petrovičová).

[172] *Representation of probability on triangle.* In: Issues in Soft Computing – Decision and Operation Research (O. Hryniewicz, J. Kacprzyk, D. Kuchta, eds.), EXIT, Warszawa, 2005, pp. 235–242 (with K. Lendelová and A. Michalíková).

[173] *On the entropy on the Lukasiewicz square.* In: Proc. Joint EUSFLAT-LFA 2005, Barcelona 2005, pp. 330 342.

[174] *On the entropy of IF-dynamical systems.* In: Proc. IWIFSGN'2000, Warszawa, 2005.

[175] *On the probability on IF-sets and MV-algebras,* Notes IFS **11** (2005), 21 25.

[176] *On the probability theory on the Atanassov sets.* In: 2006 3rd International IEEE Conference Inteligent Systems, Univ. of Westminster, London, 2006, pp. 730 732.

[177] *The probability on triangle and square.* In: Proc. Eleventh Intern. Conf. IPMU, Les Cordeliers, Paris 2006, pp. 977 981 (with K. Lendelová).

[178] *On IF-sets and MV-algebras.* In: Proc. Eleventh Intern. Conf. IPMU, Les Cordeliers, Paris 2006, pp. 2405 2407.

[179] *On the probability and random variables on IF sets.* In: Applied Arificial Intelligence, Proc. 7th FLINS Conf. World Scientific 2006, pp. 138 145.

[180] *On two ways for the probability theory on IF-sets*. In: Soft Methods for Integrated Uncertainty Modelling. Advances in Soft Computing, Springer, Berlin, 2006, pp. 285 290.

[181] *Probability on IF-sets: an elementary approach*. In: First Internat. Workshop on IFS, Generalized Nets and Knowledge Engineering (E. El-Darzi, K. Atanassov, P. Chountas, eds.), Univ. of Westminster, London, 2006, pp. 8 17 (with M. Renčová).

[182] *On two concepts of probability on IF-sets*, Notes IFS **12** (2006), 69 72.

To appear:

[183] *A set-theoretical operation over intuitinistic fuzzy sets*, Notes IFS (with K. Atanassov).

[184] *n-extraction operation over intuitionistic fuzzy sets*, Notes IFS (with K. Atanassov).

[185] *Improper Kurzweil-Henstock integral for metric semigroup-valued functions*, Atti Sem. Mat. Fis. Univ. Modena e Reggio Emilia (with A. Boccuto).

[186] *Convergence theorems for abstract Kurzweil-Henstock integral in Riesz space context*, Panamer. Math. J. (with A. Boccuto).

[187] *On two operations over intuitionistic fuzzy sets*, J. Appl. Math. Stat. Inform. (with K. Atanassov).

[188] *On some contributions to quantum structures inspired by fuzzy sets*, Kybernetika.

[189] *On two concepts of probability on IF sets*, Notes IFS.

[190] *A measure extension theorem*, Notes IFS (with P. Mazureková).

[191] *Variations on a theme by D. T. Egoroff*, Atti Sem. Mat. Fis. Univ. Modena e Reggio Emilia.

[192] *Probability theory on intuitionistic fuzzy sets*. In: Lecture Notes in Comput. Sci., Springer, Berlin, 2007.

Monographs (Music)

[1] BERGER, R.—RIEČAN, B.: *Matematika a hudba*, VEDA, Bratislava, 1997.

[2] HRONEC, O.—SULAČEK, J.—RIEČAN, B.: *Starý pán, kniha o Jurovi Hroncovi a jeho dobe*, VEDA, Bratislava, 1999.

[3] NEMOGA, K.—RIEČAN, B.: *Matematika v b mol, Štefan Schwarz, matematik a pedagóg*, VEDA, Bratislava, 1999.