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Band 9

**Dedicated to Sylvia Pulmannová
on the occasion of her 65. birthday**

**Pascal Hitzler, Gudrun Kalmbach H. E.
and Zdenka Riečanová
(Eds.)**

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Professor Sylvia Pulmannová

In these days, a prominent Slovak mathematician, Prof. Sylvia Pulmannová, is celebrating her important life event. The native from Nové Mesto and Váhom (Slovakia) studied physics at the Faculty of Sciences of the Comenius University, Bratislava (1956-61). In 1961, she became a PhD-student at the Institute of Theory of Measurement of the Slovak Academy of Sciences (SAS), Bratislava. Her PhD-theses was connected with blood viscosity measurements, hence the scientific beginning of S. Pulmannová was in some sense "bloody". Prof. S. Pulmannová obtained her CSc. degree (= PhD) in 1969 and two years later, she was conferred the degree RNDr. She defended DrSc. (the highest scientific degree in Czechoslovakia) in 1987. She has been working at the Mathematical Institute SAS, Bratislava, since 1981.

Prof. S. Pulmannová is one of the world's leading personalities in the field of quantum structure theory. The field is laying among mathematics, mathematical foundations of quantum mechanics, and logic. Her main contribution is in the theory of quantum logics and probability theory of quantum structures. This fact can be easily documented by the long list of more than 140 original scientific papers published in prestigious world scientific journals and it is crowned by two monographs S. Pulmannová and P. Pták, *Orthomodular Structures as Quantum Logics*, Kluwer Academic Publ., Dordrecht, 1991 (the English translation of *Kvantové logiky*, Veda, Bratislava, 1989 written in Slovak) and A. Dvurečenskij and S. Pulmannová, *New Trends in Quantum Structures*, Kluwer Academic Publ., Dordrecht, and Ister Science, Bratislava, 2001.

Else at the Institute of Measurement, she and the author of these lines founded a seminar on quantum logics. In this seminar, a concentrated circle of enthusiasts in the field of quantum structures met, and it was here that a world recognized Slovak school of quantum structures had started. The representatives of this seminar are today well-known experts (B. Riečan, Z. Riečanová, F. Chovanec, F. Kôpka, etc.). A very important stimulus for the development of quantum structures was the foundation of the Winter Schools on measure theory on quantum structures in Liptovský Ján Valley (Slovak mathematical mountain congress center) in 1988, 1990, 1993, 1995. A world estimation of the respected Slovak school of quantum structures was the delegation by the International Quantum Structures Association (IQSA) to organize the Fourth World Congress on Quantum Structures; that held in Liptovský Ján in 1988.

Among the most important results of S. Pulmannová, we can mention the solution of the joint distribution problem of observable on quantum logics, representation of quantum structures and abstract spaces of transient probabilities by generalized Hilbert spaces, the quantum-logic description of measurements, interrelation of ideals and congruencies in partial algebras and semigroups, the development of the theory of D-posets, effect algebras and MV-algebras.

She gained a natural respect and recognition which was registered that she is the Editor-in Chief of Mathematical Slovaca. She is member of the Editorial Boards of Tatra Mountains Mathematical Publications (Slovakia), International Journal of Theoretical Physics (USA), and Reports of Mathematical Physics (Poland) . In 2001-02 she was the President of IQSA. She is a member of IQSA and American Math. Society.

Her activity was appreciated by the Silver Award Medal of Juro Hronec of SAS for her achievements in mathematical sciences in 1999, and by the Prize of the Slovak Literary Found in 1990 and 2001 for her two monographs. She is regularly invited to respected Universities (Naples, Nottingham, Florence, Berne, Turku, Genoa, Brussels, etc.) to address her contributions at the universities or scientific conferences.

Through her teaching and supervising experience, her rich scientific experience was passed to many university students, in particular to four PhD students.

It is marvelous how this gentle and modest lady was able to joint her scientific career with her role of mother of two children, and now even of three grandchildren.

It is for me an extraordinary pleasure to congratulate Sylvia in the name of all her colleagues at the Mathematical Institute, and as well as of her friends from the "quantum structure world" on the occasion of her life event all the best, we wish her happiness and good health, and we are looking forward for more of her future inspiring mathematical results.

Anatolij Dvurečenskij

Vorwort

In diesem Band der Reihe **Begabtenförderung im MINT-Bereich** sind im ersten Kapitel wissenschaftliche Beiträge zu finden, welche der Professorin Sylvia Pulmannova zu ihrem 65. Geburtstag gewidmet sind. Auch die zwei wissenschaftlichen Artikel aus Band 8 von R. Mesiar und M. Polakovič sind ihr gewidmet. Es folgen im zweiten Teil dieses Bandes Beiträge aus dem schulischen Bildungsbereich, danach einige Artikel teilweise unterhaltsamer Art, und zum Schluss eine geometrische Axiomatik (erstes Kapitel) zu einem neuen Weltbild, das auf Unterlagen aus den Jahren 1987-2003 des Archives Kalmbach H. E. basiert.

Bad Wörishofen, im April 2004

Pascal Hitzler, Gudrun Kalmbach H. E. und Zdenka Riečanová

