

## PREFACE

This volume contains selected papers based on the talks that were presented at the tenth jubilee edition of the International Workshop on Complex Structures, Integrability and Vector Fields held in Sofia (13 -17 September), Bulgaria. It is dedicated to the 75th birthday of our colleague and friend Professor Stancho Dimiev, who together with Professor Sekigawa initiated these series of International Workshops.

The meeting brought together over 30 scientists from Europe, Africa and Asia. The main topics discussed were: complex structures, integrability, classical and modern differential geometry, group theory, etc. We hope that the papers included in this volume will make an useful reading for mathematicians and mathematical physicists.

The organizers of the workshop take the opportunity to express their sincere thanks to Professor Jordan Stamenov, Director of the Institute for Nuclear Research and Nuclear Energy and to Professor Stefan Dodunekov, Director of the Institute of Mathematics and Informatics of the Bulgarian Academy of Sciences. Without their organizational and financial help this Workshop would not have been possible.

It is our pleasure to thank the colleagues who helped with refereeing the papers and to Mrs Mariana Hadzhilazova for her help in preparing this volume.

*Kouei Sekigawa  
Vladimir Gerdjikov  
Yasuo Matsushita  
Ivailo Mladenov*

# PROFESSOR STANCHO DIMIEV

## Short Biographical Notes



The 10th International Workshop on Complex structures, integrability and vector fields was dedicated to the 75th birthday of our colleague and friend Professor Stancho Dimiev, who was the initiator (jointly with Professor Sekigawa) of these series of International Workshops.

Stancho Dimiev was born in the Bulgarian town of Popovo in 1932 and completed his undergraduate education in Mathematics at the Faculty of Mathematics and Physics of the Sofia University 'St. Kliment Ohridski' during the years 1950–1955. Since 1963 he has been working at the Institute of Mathematics (now Institute of Mathematics and Informatics) of the Bulgarian Academy of Sciences (BAS). Professor Dimiev retired in 2002.

He spent the years 1960–1963 at 'Lomonosov' Moscow State University and during 1968–1969 he specialized at 'Henri Poincaré' Institute in Paris under the guidance of the famous French mathematicians Henri Cartan and Gustave Choquet, both members of the Académie des Sciences. As it is known the main results of Henri Cartan are in the domain of several complex variables and he was one of the founders of the group of mathematicians known as 'Nicolas Bourbaki' in 1939. Stancho Dimiev defended his PhD thesis in Sofia in 1975.

The main results of Professor Dimiev are in the area of complex analysis (complex structures, semi-analytic functions) and functional analysis in convex spaces.

Professor Dimiev is an well-known expert in the mathematical community. He is an author and co-author of about 80 mathematical publications. He has been visiting professor at the University of Rome – La Sapienza in 1982, the University of Bohum in 1987, and the Hokkaido University in 1991.

Professor Dimiev is an excellent teacher of Mathematics. He also initiated and organized many mathematical events and activities. I had the pleasure to attend his courses on Algebraic geometry and Several complex variables as a student in 1967–1968 and to participate in his seminar on Analysis at the Institute of Mathematics of the Bulgarian Academy of Sciences in the late sixties of the last century. With great enthusiasm he introduced the young Bulgarian mathematicians in various branches of modern Mathematics. Professor Stancho Dimiev was an adviser of 10 PhD students in the Universities of Sofia, Plovdiv and Shumen.

Professor Dimiev is still continuing his didactic and research activities. His research is devoted to both pure Mathematics and the relations between Mathematics and Physics.

I will always remember our national Congress in Mathematics in 1967 when Professor Dimiev accompanied the eminent French mathematician Arnand Denjoi (known for the integral of Peron–Denjoi). This gave an opportunity to many young scientists to attend the talks of some of the best mathematicians in the world (L.S. Pontriagin was also

there), and to have personal contacts with them.

In conclusion I would like to wish to our colleague and friend, to the well-known Bulgarian mathematician Professor Stancho Dimiev long life, a lot of energy and success in his forthcoming scientific investigations in the area of analysis and more specifically – complex analysis.

*Professor, D. Sci., Petar Popivanov  
Full member of the  
Bulgarian Academy of Sciences  
Sofia, December 2010*

## **THE INTERNATIONAL WORKSHOPS ON COMPLEX STRUCTURES AND VECTOR FIELDS IN BULGARIA**

### **Brief History**

This series of the International Workshops originated following the discussions we have with Professor S. Dimiev during his stay at Niigata University in November of 1991. He had proposed to initiate an International Workshop on the topics in Complex Analysis, Differential Geometry and related areas. We planned to launch the first Workshop in the next year somewhere in Bulgaria, and furthermore, we were determined to continue organizing Workshops every two years following the first one. I liked the idea very much and gave it my full support. As a result, the first Workshop was held successfully at the Institute of Mathematics and Informatics (Sofia) in 1992. The number of the participants of the first Workshop was not so large and included only two Japanese participants namely, Professor H. Hashimoto and myself. After the event, we have published successfully the Proceedings of the Workshop with World Scientific.

Professor S. Dimiev worked with me as a co-editor of the proceedings of the first eight workshops. Professor V. Gerdjikov joined us as a member of the editorial board of the proceedings of the previous workshop. I would like to emphasize the immense contribution of Professor T. Oguro in the editorial work for all proceedings. He was in charge of the proof setting of all the contributed manuscripts. I would like also to thank the regular participants: Professors T. Adachi and S. Maeda for their personal donations for publishing of these Proceedings. I firmly believe that we could not continue with our Workshops without their devoted supports. I consider as the most successful in the series of these Workshops the fourth one. It was attended by many participants from many countries. Lastly, I would like to express my gratitude to Professor S. Dimiev for the nomination of “Commemorative Diploma” which was awarded by the Institute of Mathematics and Informatics, Bulgarian Academy of Sciences to me and also to Professors H. Hashimoto from Meijo University and T. Oguro from Tokyo Denki University, Japan.

*Professor Kouei Sekigawa  
Niigata University, Japan  
December 2010*