CONFERENCE ON GEOMETRY
AND MATHEMATICAL PHYSICS
Bulgaria, Zlatograd, 28.08 – 1.09.1995

Organizing committee: *Vasil Tsanov* – Sofia University (Chairman), *Harry Aleksiev* – High School for Management and Laguages in Zlatograd (Local Organizer), *Leon Farhy* – Sofia University (Scientific Secretary), *Emil Horozov* – Sofia University, *Ivailo Mladenov* – Bulgarian Academy of Sciences, *Angel Zhivkov* – Sofia University.

LIST OF PARTICIPANTS

Ali, S. Twareque – Department of Mathematics and Statistics, Concordia University, Montreal, Quebec, CANADA H4B IGR
e-mail: `stali@neumann.concordia.ca`

Bakalov, Bojko – Department of Mathematics and Informatics, Sofia University, 5 "J. Bourchier" bd., Sofia 1164, BULGARIA
e-mail: `bbakalov@fmi.uni-sofia.bg`

Berline, Nicole – Centre de Mathematiques, Ecole Polytechnique, 91128 Palaiseau, FRANCE e-mail: `berline@orphee.polytechnique.fr`

Bouchakchiev, Vilislav – Department of Mathematics and Informatics, Sofia University, 5 "J. Bourchier" bd., Sofia 1164, BULGARIA
e-mail: `buchak@fmi.uni-sofia.bg`

Christov, Ognian – Department of Mathematics and Informatics, Sofia University, 5 "J. Bourchier" bd., Sofia 1164, BULGARIA
e-mail: `christov@fmi.uni-sofia.bg`

Cieliebak, Kai – HG E 18.4, ETHZ, 8092 Zurich, SWITZERLAND
e-mail: `cielieba@math.ethz.ch`

Denchev, Racho – Department of Mathematics and Informatics, Sofia University, 5 "J. Bourchier" bd., Sofia 1164, BULGARIA

Dragnev, Dragomir – Department of Mathematics and Informatics, Sofia University, 5 "J. Bourchier" bd., Sofia 1164, BULGARIA
e-mail: `dragnev@fmi.uni-sofia.bg`

Georgiev, Georgi – Department of Mathematics and Informatics, Sofia University, 5 "J. Bourchier" bd., Sofia 1164, BULGARIA
e-mail: `georgig@fmi.uni-sofia.bg`

Horozov, Emil – Department of Mathematics and Informatics, Sofia University, 5 "J. Bourchier" bd., Sofia 1164, BULGARIA
e-mail: `horozov@fmi.uni-sofia.bg`

Iliev, Valentin – Section of Algebra, Institute of Mathematics, Bulgarian Academy of Sciences, 1113 Sofia, BULGARIA e-mail: `iliev@bgearn.acad.bg`

Johnsen, Trigve – Department of Mathematics, University of Bergen, Allegt 55, 5007 Bergen, NORWAY e-mail: `johnsen@mi.uib.no`

Kasparian, Azniv – Department of Mathematics and Informatics, Sofia University, 5 "J. Bourchier" bd., Sofia 1164, BULGARIA
e-mail: `kasparia@fmi.uni-sofia.bg`

Kuratsuji, Hirochi – Department of Physics, Ritsumeikan University, Kusatsu city, 525-77 JAPAN e-mail: `kra@jpnyitp.bitnet`

Levy, Roni – Department of Mathematics and Informatics, Sofia University, 5 "J. Bourchier" bd., Sofia 1164, BULGARIA
e-mail: `levy@fmi.uni-sofia.bg`

Mladenov, Ivailo – Institute of Biophysics, Bulgarian Academy of Sciences, Bl. 21, 1113 Sofia, BULGARIA e-mail: `mladenov@fmi.uni-sofia.bg`

Pedersen, Niels – Matematisk Institut, Kobenhavns Universitet, Universitetsparken 5, 2100 Kobenhavn, DENMARK e-mail: `matnvp@math.ku.dk`

Ranestad, Kristian – Matematisk Institutt, Boks 1053, Blindern, 0316 Oslo, NORWAY e-mail: `ranestad@math.uio.no`

Schempp, Walter – Lehrstuhl fuer Mathematik I, University of Siegen, 57068 Siegen, GERMANY
e-mail: `schempp@mathematik.hrz.uni-siegen.d400.de`

Schmitt, Andreas – Institut fur Reine Mathematik der HU-Berlin, Ziegelstrasse 13 A, 10099 Berlin, GERMANY
e-mail: `schmitt@mathematik.hu-berlin.de`

Stanislavova, Milena – Institute of Architecture and Civile Ingeneering, Hr.Smirnenski Bld. 1, 1421 Sofia, BULGARIA e-mail: `acetra@bgcict.acad.bg`

Tolev, Doytchin – Department of Mathematics, University of Plovdiv, Plovdiv, BULGARIA e-mail: `dtolev@ulcc.uni-plovdiv.bg`

Tsanov, Vasil – Department of Mathematics and Informatics, Sofia University, 5 "J. Bourchier" bd., Sofia 1164, BULGARIA
e-mail: `tsanov@fmi.uni-sofia.bg`

Vladov, Nikola – Department of Mathematics and Informatics, Sofia University, 5 "J. Bourchier" bd., Sofia 1164, BULGARIA
e-mail: `vladov@fmi.uni-sofia.bg`

Vodev, Georgi – Universite de Rennes 1, IRMAR, Campus de Beaulieu, 35042 Rennes, FRANCE e-mail: `vodev@univ-rennes1.fr`

Yakimov, Milen – Department of Mathematics and Informatics, Sofia University, 5 "J. Bourchier" bd., Sofia 1164, BULGARIA
e-mail: `myakimov@fmi.uni-sofia.bg`

Yotov, Miroslav – Department of Mathematics and Informatics, Sofia University, 5 "J. Bourchier" bd., Sofia 1164, BULGARIA
e-mail: `yotov@fmi.uni-sofia.bg`

Zhivkov, Angel – Department of Mathematics and Informatics, Sofia University, 5 "J. Bourchier" bd., Sofia 1164, BULGARIA
e-mail: `zhivkov@fmi.uni-sofia.bg`

Lectures delivered at the conference on Geometry and Mathematical Physics

T. Ali, Coherent states in quantization

B. Bakalov, Tau-functions as highest weight vectors of W-algebras

N. Berline, Equivariant Chern characters of a superconnection and index of transversally elliptic operators

V. Buchakchiev, Application of the Double Flag Fibrations

O. Hristov, On KAM-theory conditions for Kirchhoff top

K. Cieliebak, What does the interior of a symplectic manifold know about its boundary

Dr. Dragnev, The isoenergetical nondegeneracy of the problem of two centers of gravitation

L. Farhy and *V. Tsanov,* Trace distributions, resonances and zeros of class of zeta functions

V. Iliev, Generalization of Polya enumeration theorem

T. Johnsen, Curves on Calabi-Yau threefolds

A. Kasparian, When does a bounded domain cover a projective manifold?

H. Kuratsuji, Quantum mechanics of Guiding center by using coherent state path integral

R. Levi, Hermitian Riemann-Roch theorem for singular spaces

I. Mladenov and *V. Tsanov,* Reduction in stages and complete quantization of the MIC-KEPLER problem

N. Pedersen, The Heisenberg group of a solvable Lie group and its quantization

K. Ranestad, Calabi-Yau threefolds with abelian surfaces in P^6

W. Schempp, Magnetic resonance imaging (MRI) and harmonic analysis on the Heisenberg group

A. Schmitt, Skyrme-model and a geometric construction for almost solutions of minimal energy in nonlinear field theory

D. Tolev, Some additive problems with prime numbers

G. Vodev, Asymptotics on the number of scatering poles

M. Yakimov, Highest weight modules of W-algebras, Darboux transformations and bispectral algebras

M. Yotov, Nadel's submanifolds of Fano manifolds X with a Picard group $\text{Pic}(X)$ isomorphic to Z.

A. Zhivkov, Effective solutions of Lagrange top

The papers of this volume are scripts of lectures delivered by participants in the conference. They were submited to the organizing committee before the end of January 1996, and are ordered in alphabetic order of the name of first author.

The organizing committee thanks the administration and citizens of Zlatograd whose contribution to the success of the conference was invaluable. Special thanks are due to Veselin Yurchiev whose organizational skills were of very essential help.

V. Tsanov