

Preface

Specialisation of science long ago resulted in that researchers in different fields practically lost ability to understand each other. Even mathematics that permeates absolutely all serious theoretical studies tends to increasing divergence of its various branches, including those that quite recently were the single whole.

On the other side there is increased universal penetration of methods and ideas generated in different fields. One of such concepts applicable in a vast multitude of areas of modern science is symmetry. And symmetry is the main link for the papers included into the present Proceedings.

Symmetry is a multi-faceted concept. It was discovered in ancient times and is utilised extensively in arts, natural sciences, mathematics, industry, crafts and design etc. Even in mathematics, in fact we have a large variety of different kinds of symmetries. And our conference that gathered many experts from rather different fields may serve as a proof to this fact.

The Fifth International Conference “Symmetry in Nonlinear Mathematical Physics” was traditionally organised by the Institute of Mathematics of the National Academy of Sciences of Ukraine. It continues the series of meetings started in 1995 by Professor Wilhelm Fushchych. We are very pleased to see that popularity of these meetings increases with each new conference.

The Fifth Conference was the most representative with more than 250 participants from 38 countries presented their talks, the majority of which were included into these Proceedings. The titles of the conference talks not presented for publication are given at the end of Part 3.

The Proceedings are published in three parts and include 209 papers. A significant proportion of the papers deal with integrability as well as mainstream subjects in the Lie theory application in mathematical physics that is analysis of symmetries of differential equations, construction of invariants, symmetry reductions and construction of exact solutions. These papers are collected mostly in Part 1. The papers on supersymmetry and application of symmetry in physics are presented in Part 2. Papers on algebra, group and representation theory, together with various symmetry-related problems were included into Part 3.

We believe that these Proceedings will be a worthy summary of the successful conference, and contain valuable input into development of ideas and methods related to studies and applications of symmetries. We would wish them to serve as an inspiration for future research for all readers.

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