



POLISH ACADEMY OF SCIENCES

Systems Research Institute

**MODELLING CONCEPTS
AND DECISION SUPPORT
IN ENVIRONMENTAL SYSTEMS**

Editors:

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Olgierd Hryniewicz**

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The purpose of the present publication is to popularize information tools and applications of informatics in environmental engineering and environment protection that have been investigated and developed in Poland and Germany for the last few years. The papers published in this book were presented during the workshop organized by the Leibniz-Institute of Freshwater Ecology and Inland Fisheries in Berlin in February 2006. The problems described in the papers concern the mathematical modeling, development and application of computer aided decision making systems in such environmental areas as groundwater and soils, rivers and lakes, water management and regional pollution. The editors of the book hope that it will support the closer research cooperation between Poland and Germany and when this intend succeeds then also next publications of the similar kind will be published.

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PREFACE

This book contains the papers describing the most interesting research results that have been obtained during the last years in the area of environmental engineering and environment protection at the Systems Research Institute of Polish Academy of Sciences in Warsaw (IBS PAN) and the Leibniz-Institute of Freshwater Ecology and Inland Fisheries in Berlin (IGB). These papers were presented during the First joint workshop IBS PAN-IGB in Berlin in February 2006. There are ten papers chosen for publication in this book and they have been divided into four chapters dedicated to different fields of the area concerned. These fields are: Groundwater and Soil; Rivers and Lakes; Water Management and Decision support; Regional pollution. In each of these fields the papers representing both institutes are presented in order to create the possibility of the comparison of methodology and computing tools that are used for solving similar problems in Polish and German research institutions.

It should be interesting to give some explanation concerning the reason for the decision to organize the workshop and to publish this book. While trying to establish scientific cooperation between both institutes we unexpectedly have noticed that despite the neighbourhood of Poland and Germany, and of many existing contacts on political, economic and cultural level, there is no formalized scientific cooperation between both countries on the governmental level. This means that no bilateral programs of scientific cooperation between Poland and Germany exist that could support the common research by the organizational and financial help. Even if some cooperation between Polish and German universities and research institutes takes place, it appears that this is mostly a result of personal activities and contacts of individual scientists.

It seems to us very important that especially in the present situation, when the common economic market has been created after Poland had joined the European Union, some promotional cooperative research programs shall be initiated. Such programs should promote a system approach in solving the problems of scientific cooperation by making it much more easy and by securing the appropriate financing of common research activities.

As the solution of cooperation problems on the governmental level does not exist yet, the idea has arisen in our both institutes to formalize the organization of scientific cooperation on a local level. The join workshop and the wide presentation of the research activities in this book is the first step of this approach. The second step would be the definition of the common interests of both partners and the state-

ment of the tasks that could be investigated together by joint research teams. The third and the last step of this procedure would be the preparation of applications for some common projects that could be submitted to the relevant ministries of both countries in order to get the support for the realization of common research plans.

We hope that the realization of this idea will be successful and will make the scientific cooperation between Poland and Germany closer and more effective.

Jan Studzinski
Olgierd Hryniewicz

Warsaw, April 2006

Jan Studzinski, Olgierd Hryniewicz (Editors)

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