

XVI International Congress
on Mathematical Physics

ICIAM Grant Report

Summary

Grant: The money is provided to support scientists and students from the developing countries attending the 16th International Congress on Mathematical Physics convening in Prague in August 2009.

Granting Organization: International Council for Industrial and Applied Mathematics (ICIAM)

Grant Sum: USD 3500, of which USD 2500 is paid in advance and the rest after the report is received and approved

The way of using the money: The money were to used to help participants of the congress in two ways. The first one consisted of contributions to travel expenses of several participants from Ukraine, India and Russia. Furthermore, we have covered for some participants from Ukraine, Pakistan and Benin their registration (fully or partially, in different categories: member, nonmember, student).

Prague, January 21, 2010

Pavel Exner
ICMP convener

General Information about the Congress

The triennial International Congress on Mathematical Physics (ICMP) is the main meeting for the mathematical physics community worldwide. The first one met in Moscow 1972 and since the foundation of the International Association of Mathematical Physics (IAMP) in 1976 it is under its aegis. The congress is vital for the cohesion of the field and serves as an important source of inspiration beyond the narrow disciplinary borders. Successful ICMP's managed to give a significant boost to the field.

The ICMP in Prague convened on *August 3–8, 2009*, being traditionally preceded by Young Researcher Symposium on July 31 – August 1. The congress venue was the Clarion Congress Hotel. Despite the fact that many mathematical physicists were unable to attend as the result of the economical crisis and the corresponding restrictions imposed by their institutes, the number of registered participants was 618 making the congress the third largest in history. More participants data are given below.

The programme covered all branches of mathematical physics. We present here a programme summary, a detailed list of all the speakers with the talk titles and abstracts is posted at the page <http://www.icmp09.com/>. The main components were plenary talks, topical sessions with invited and contributed talks, poster sessions, plus several other scientific activities. The one-hour plenary talks were delivered by

Vladimir Bazhanov (*Australian National University, Canberra*)

Demetrios Christodoulou (*ETH Zurich*)

László Erdős (*Ludwig-Maximilian Universität München*)

Bertrand Duplantier (*CEA Saclay*)

Alice Guionnet (*Ecole Normale Supérieure de Lyon*)

Philip Holmes (*Princeton University*)

David Kosower (*CEA Saclay*)

Roberto Longo (*Università di Roma "Tor Vergata"*)

Jens Marklof (*University of Bristol*)

Vieri Mastropietro (*Università di Roma "Tor Vergata"*)

Alessandro Pizzo (*University of California Davis*)

Petr Šeba (*Czech Academy of Sciences*)

Robert Seiringer (*Princeton University*)
Sylvia Serfaty (*Courant Institute*)
Samson Shatashvili (*Trinity College Dublin*)
Steven Weinberg (*University of Texas, Austin*)

The second key element were topical sections organized by persons appointed by the International Scientific Committee:

MECHANICS AND DYNAMICAL SYSTEMS (INCLUDING INTEGRABLE SYSTEMS AND HAMILTONIAN STABILITY)
Organizers: Igor Krichever (*Columbia University*) and Lai-Sang Young (*Courant Institute*)

EQUILIBRIUM STATISTICAL MECHANICS (CLASSICAL AND QUANTUM)
Organizers: Marek Biskup (*UCLA*) and David Brydges (*University of British Columbia*)

NON-EQUILIBRIUM STATISTICAL MECHANICS (INCLUDING STOCHASTIC EVOLUTIONS EXCEPT SLE AND BOLTZMANN EQUATION)
Organizers: Herbert Spohn (*TU München*) and Horng-Tzer Yau (*Harvard University*)

PDE'S (FLUID DYNAMICS, WAVE EQUATION AND NLSE, BOLTZMANN EQUATION, GENERAL RELATIVITY, AND ELASTICITY)
Organizers: Sergiu Klainerman (*Princeton University*) and Grigory Seregin (*Steklov Institute Sankt Petersburg*)

PROBABILITY THEORY (INCLUDING RANDOM MATRICES AND SLE)
Organizers: Yuval Peres (*UC Berkeley*) and Wendelin Werner (*Université Paris-Sud, Orsay*)

OPERATOR ALGEBRAS (INCLUDING NONCOMMUTATIVE GEOMETRY)
Organizers: Detlev Buchholz (*Universität Göttingen*) and Masaki Izumi (*Kyoto University*)

NONRELATIVISTIC QUANTUM MECHANICS (INCLUDING QUANTUM INFORMATION)
Organizers: Nilanjana Datta (*Cambridge University*) and Peter Kuchment (*Texas A&M University*)

STRING THEORY AND QUANTUM GRAVITY

Organizers: Gary Gibbons (*Trinity College, Cambridge*) and Hermann Nicolai (*Max-Planck-Institut für Gravitationsphysik, Potsdam*)

QUANTUM FIELD THEORY (INCLUDING FIELD THEORETIC METHODS
IN CONDENSED MATTER)

Organizers: Krzysztof Gawedzki (*ENS Lyon*) and Manfred Salmhofer (*Max-Planck-Institut für Mathematik, Leipzig*)

MANY-BODY QUANTUM MECHANICS (CONDENSED MATTER,
NANOSCALE, ELASTICITY)

Organizers: Gian Michele Graf (*ETH Zurich*) and Jakob Yngvason (*Universität Wien*)

NEW FRONTIERS IN MATHEMATICAL PHYSICS

Organizers: Joseph Avron (*Technion, Haifa*), Ruth Durrer (*Université de Genève*), and Israel Michael Sigal (*University of Toronto*)

The number of invited talks ranged between four and eight, their length between 30 and 45 minutes, the total number of them was 70. In addition to that there were about 60 shorter contributed talks selected by the session organizers for the proposals of the participants. Finally, about 180 contributions were presented as posters. Taken together, these numbers mean that a majority of participants was given opportunity to present their results at the congress.

An important component of the congress was the round table session under the title “Mathematical Physics: Future Challenges” moderated by Joel Lebowitz (Rutgers) which opened by plenary lectures by

Michael Berry (*Bristol*)

Stanislas Leibler (*Rockefeller University*)

Leonard Susskind (*Stanford*)

followed by a lively discussion generally regarded as useful and inspirational.

At the Young Researcher Symposium mentioned above the plenary talks were given by the following speakers:

Rafael Benguria (*P. Universidad Católica de Chile*)

Anna De Masi (*Universita di L'Aquila*)

Helmut Hofer (*Courant Institute*)

Yakov Sinai (*Princeton*)

Wei-Min Wang (*Université Paris-Sud, Orsay*)

Reinhard Werner (*TU Braunschweig*)

In addition, there were 23 seminar talks by the young participants, each lasting 25 minutes.

Budget summary

While the budget report of the grant in question given below is detailed, the total figures are preliminary only because at the time of this report the congress budget is not closed. This will be done only after the congress proceedings are edited, paid and mailed to the participants – which is expected to happen in the spring of 2010. Another factor which influences the budget is that it was done in Czech currency, and payments in Euros at different dates were converted due to actual exchange rate which fluctuated several percent during the whole accounting period.

Nevertheless, the budget is expected to be balanced with the income and expenses about 290 thousand Euro. The main part of the income, about 212 thousand euro came from the registration fees, 56 thousand from sponsor support and 22 thousand from publisher exhibitions. It is necessary to say, however, that the overall sponsor support was much higher, about 123 thousand Euro, more than a half of it was either given to the participants directly (in case of the NSF and DFG grants) or used by the organizers to cover the participant registration.

The expenses covered mostly premises rental with the appropriate AV equipment, exhibition and poster stands, catering, congress material purchase and printing, databases, and the remuneration of our professional partner, Congress Business Travel, Ltd.

The specific use of the grant

We used the ICIAM grant, including the part which has to be reimbursed, after the congress, in two ways. First of all, we contributed to several participants from Ukraine, India and Russia to their travel expenses, secondly

we cover for some participants from Ukraine, Pakistan and Benin their registration (fully or partially, in different categories: member, nonmember, student). The detailed description of the expenses is given in the following table:

<i>Name</i>	<i>Travel</i>	<i>Registr.</i>	<i>Total</i>
Mark Malamud (Ukraine)	250		250
Oleksii Rebenko (Ukraine)	235	260	495
Alexander Rezounenko (Ukraine)	135		135
Chandrasekhar Mukku (India)	230		230
Alexander Vasilev (Russia)	150		150
Igor Popov (Russia)	200		200
Maria Skopina (Russia)	197		197
Khalid Saifullah (Pakistan)		300	300
Renata Troian (Ukraine)		150	150
Lilia Mironiuk (Ukraine)		90	90
Norbert Hounkonnou (Benin)		260	260
<i>Total</i>	1397	1060	2457

The sums are given in Euro. The total of EUR 2457 corresponded — or was slightly higher by the exchanged rate at the time of the congress — to the grant sum of USD 3500.

Participation statistics

Out of the 618 participants, 76 were women which makes cca 12%. The same was the ratio among the plenary speakers, 2 out of 16. In the invited session talks it was 7 out of 70, among the YRS plenary speakers 2 out of 6.

No data are directly available for an age statistics, however, in the naked-eye view the congress attracted large numbers of young people, both among the speakers and among the other participants. As for the geographical distribution, people from 49 countries took part; the distribution according to affiliation is the following:

<i>Country</i>	<i>Participants</i>
Czech Republic	79
USA	77
Germany	68

France	48
UK	38
Japan	30
Italy	28
Russia	24
Poland	21
Switzerland	20
Spain	17
Israel	14
Denmark	11
Ukraine	11
Mexico	10
Austria	9
Brazil	8
Canada	8
Portugal	8
Romania	8
Finland	7
Belgium	6
Turkey	6
Hungary	5
Chile	5
Ireland	5
Netherlands	5
South Korea	5
China	4
Australia	3
Bulgaria	3
Thailand	3

and furthermore, *two* participants from Belarus, Bosnia-Hercegovina, Greece, Hong Kong, India, Norway and Sweden, and a *single* one from Armenia, Benin, Cyprus, Egypt, Georgia, Morocco, Pakistan, Singapore, Slovakia and South Africa

List of participants

The full list of registered participants with the countries they came from is available at web page <http://www.icmp09.com/registered-participants>