# International Congress of Mathematicians Berlin, Germany August 18-27, 1998

## Second Announcement

The Organizing Committee is pleased to invite you to attend the International Congress of Mathematicians in Berlin, August 18–27, 1998.

Bundespräsident Professor Roman Herzog has personally expressed a most cordial welcome to all participants.

The Congress will be held under the auspices of the International Mathematical Union and under the sponsorship of the German Mathematical Society (DMV), the Federal Ministry of Education, Science, Research and Technology, and the Senate of Berlin.

This announcement describes the Congress and gives related information. It explains how to register and how to submit a short communication or a poster representation. It also contains the necessary forms for securing accommodation during the Congress.

## Contents

# A. Location of the Congress

## A.1 Venue

The mathematical tradition in Germany is linked to the International Congresses. Felix Klein at the opening of the Congress on Mathematics and Astronomy in Chicago 1893 stressed that the mathematicians must form international unions. At the second congress in Paris 1900 David Hilbert presented his list of problems, the third congress was held in Heidelberg 1904, and now the German Mathematical Society is happy to welcome you at the end of the century to Berlin.

Berlin has a long mathematical tradition. Euler, one of the greatest mathematicians of all time, worked and lived here for 25 years. For the 19th century, names from Dirichlet to Jacobi, from Kummer to Weierstraß stand out. The exodus of mathematicians from Berlin because of the Nazi terror was dramatic and tragic. After the second world war the city was divided, and mathematics and all other sciences had to overcome many difficulties. Now the city is united again and promises to become a great mathematical center through its three universities and two mathematical research institutes.

Berlin is known throughout the world as a political center, as a symbol of separation and then of unification. But Berlin is also a wonderful city with lakes and woods, historical sites and sights, museums and galleries, theaters and concert halls, and not the least, its famous nightlife. There will be enough to do and to see for everybody.

## A.2 The Congress

The activities of the Congress are divided between two locations. The program of the first day, August 18, 1998, including the opening ceremony, will take place at the International Congress Center (ICC). On all other days, the lectures, seminars and short communications will be held at the Technical University (TU) which is situated downtown. The map on page 9 shows the locations and indicates how to get there.

The address of the Congress is:

ICM'98
c/o Prof. Dr. J. Winkler
TU Berlin, MA 8–2
Str. des 17. Juni 135
D-10623 Berlin, Germany

Phone: +49 30 314-24105
Fax: +49 30 314-21604
E-mail: `icm98@zib.de`
WWW: `http://elib.zib.de/ICM98`

## A.3 Deadlines

| | |
|---|---|
| May 1, 1998 | Early Registration at reduced rate |
| May 1, 1998 | Submission of abstracts for<br>• Plenary Lectures<br>• Invited Lectures<br>• Short Communications<br>• Poster Sessions |
| May 15, 1998 | Hotel accommodation |
| June 15, 1998 | Cancellation (with partial refund) of<br>• tickets for the opera<br>• tickets for the tourist program |
| July 1, 1998 | Submission of manuscripts of<br>• Invited Lectures for the Proceedings<br>• Plenary Lectures for the Proceedings |
| July 15, 1998 | Cancellation (with partial refund) of<br>• private accommodation<br>• registration |

### Further Deadlines

| | |
|---|---|
| March 1, 1998 | Submission for the Session on Mathematical Software |
| April 3, 1998 | Submission of videos for the VideoMath Festival |

# B. Scientific Program

The tentative program is summarized on page 17. Some changes may become necessary depending on the number of speakers. The final program will be available electronically by June 1, 1998.

## B.1 Opening and Closing Ceremonies

The opening ceremony will be held in the International Congress Center (ICC) at 10:00 on Tuesday, August 18, 1998. As part of the program, the Fields medals and the Nevanlinna prize will be awarded. The ICC seats up to 5000 people and allows a good view from all seats.

After the opening session, there will be a lunch reception at the ICC followed by addresses on the works of the Fields medalists and the Nevanlinna prize winner and the first Plenary Lecture.

The closing ceremony, including the last Plenary Lecture, is scheduled for Thursday, August 27, at 14:00 in the main lecture hall (Auditorium Maximum) of TU Berlin.

## B.2 Plenary Lectures

At the recommendation of the Program Committee, appointed by the International Mathematical Union (IMU), the Organizing Committee has invited 21 mathematicians to give one-hour Plenary Lectures. The names of the speakers, together with their affiliations and fields of research, are listed below. The Plenary Lectures will inform participants of major developments, problems, and trends in mathematics.

The IMU General Assembly, the Program Committee, and the Organizing Committee have emphasized that these lectures should be comprehensible to a wide spectrum of mathematicians. All plenary speakers have agreed to prepare addresses for a general mathematical audience.

**Jean-Michel Bismut** (Université Paris-Sud, Orsay, France): Differential Geometry and Global Analysis

**Christopher Deninger** (Universität Münster, Germany): Arithmetic Algebraic Geometry, L-Functions of Motives

**Persi Diaconis** (Mathematics and ORIE, Cornell University, Ithaca, USA): Statistics, Probability, Algebraic Combinatorics

**Giovanni Gallavotti** (Universitá La Sapienza, Roma, Italy): Dynamical Systems, Statistical Mechanics, Probability

**Wolfgang Hackbusch** (Universität Kiel, Germany): Numerical Analysis, Scientific Computing

**Helmut H. W. Hofer** (Courant Institute, New York University, USA): Global Analysis, Dynamical Systems

**Ehud Hrushovski** (Hebrew University of Jerusalem, Israel): Logic

**I. G. Macdonald** (Queen Mary and Westfield College, University of London, England): Lie Groups, Algebraic Combinatorics

**Stéphane Mallat** (École Polytechnique, CMAP, Palaiseau, France): Applied Mathematics, Signal Processing

**Dusa McDuff** (SUNY Stony Brook, USA): Symplectic Topology

**Tetsuji Miwa** (RIMS, Kyoto University, Japan): Integrable Systems, Infinite Dimensional Algebras

**Jürgen Moser** (ETH Zürich, Switzerland): Dynamical Systems, Partial Differential Equations

**George C. Papanicolaou** (Stanford University, USA): Applied Mathematics, Probability

**Gilles Pisier** (Université Paris VI, France and Texas A&M University, College Station, USA): Functional Analysis

**Peter Sarnak** (Princeton University, USA): Number Theory

**Peter W. Shor** (AT&T Labs, Florham Park, USA): Computer Science

**Karl Sigmund** (University of Vienna, Austria): Mathematical Ecology, Evolutionary Game Theory

**Michel Talagrand** (C.N.R.S., Université Paris VI, France): Probability, Statistical Mechanics, Functional Analysis, Measure Theory

**Cumrun Vafa** (Harvard University, Cambridge, USA and Tehran, Iran): String Theory, Quantum Field Theory and Quantum Gravity

**Marcelo Viana** (IMPA, Rio de Janeiro, Brazil): Dynamical Systems, Ergodic Theory

**Vladimir Voevodsky** (Northwestern University, Evanston, USA): Algebraic Cycles and Motives

The first Plenary Lecture will be given by J. Moser and will be delivered in the afternoon of the opening day at the International Congress Center. The other addresses will be given in the Auditorium Maximum (lecture hall H 105) of TU Berlin. The Auditorium Maximum has a capacity of 1200 seats. The talks will also be shown in an adjoining lecture hall via closed-circuit television, so that an audience of more than 2000 people can be reached.

## B.3 Invited Lectures

Also at the recommendation of the IMU Program Committee, more than 160 mathematicians have been invited to give 45-minute lectures in specified sections. These lectures are intended to be surveys of significant topics in the respective area of research. The speakers have been asked to make their lectures comprehensible for the general mathematical community, and they agreed to do so.

These Invited Lectures will take place in the afternoons of August 19–22 and 24–26, beginning at 14:00.

The Invited Lectures will be given in several large lecture rooms at TU Berlin. Usually there will be about six or seven lectures simultaneously. The list of sections is as follows, where the number in parentheses indicates the expected number of presentations in that section.

1. Logic (5)
2. Algebra (8)
3. Number Theory and Arithmetic Algebraic Geometry (9)
4. Algebraic Geometry (7)
5. Differential Geometry and Global Analysis (13)
6. Topology (8)
7. Lie Groups and Lie Algebras (10)
8. Analysis (14)
9. Ordinary Differential Equations and Dynamical Systems (10)
10. Partial Differential Equations (10)
11. Mathematical Physics (12)
12. Probability and Statistics (13)
13. Combinatorics (8)
14. Mathematical Aspects of Computer Science (6)
15. Numerical Analysis and Scientific Computing (6)
16. Applications (12)
17. Control Theory and Optimization (7)
18. Teaching and Popularization of Mathematics (6)
19. History of Mathematics (3)

## B.4 Short Communications and Posters

All Ordinary Members (see I.1) of the Congress will have the opportunity to present their mathematical work in the form of a Short Communication or a Poster — provided that

- they have registered by May 1 and marked in the registration form, that they want to present their work,
- they have submitted an abstract by that date,
- their contribution has been accepted by the Local Scientific Committee.

Only one Short Communication or Poster (and thus only one abstract) is allowed for each member. Each Short Communication lasts 15 minutes including discussion. Short Communications are grouped into time slots of 45 minutes for three presentations. The rooms for Short Communications are equipped with a blackboard and an overhead projector. Each Poster session lasts 105 minutes; during that period the authors should stand by their posters and be available for questions and discussion. Authors presenting a Poster are advised to bring the material of the Poster with them when they come to the Congress since no facilities for preparing posters are available on site. The size of the individual poster panels is as follows: width 180 cm, height 120 cm.

The abstract for a Short Communication or a Poster must include the appropriate section number (see B.3) and 1991 MS classification number (see N.) so that the Communications and Posters can be grouped in a coherent way for presentation. Abstracts may be submitted in English, French, Russian or German. Abstracts of accepted Posters and Short Communications which are properly prepared and received by the deadline will be reproduced and distributed to all Ordinary Members when they pick up their registration package. The Local Scientific Committee will notify authors of acceptance/rejection of their contribution.

Instructions on how to prepare an abstract are in Section D.3. Abstracts which do not conform to the stipulated rules will be returned to the author for resubmission. Late papers will not be accepted. However, it is possible to present them in ad-hoc sessions that will be organized and announced during the conference.

## B.5 Organized Sessions

We invite Ordinary Members to organize sessions of Short Communications on their own initiative. Such sessions and their organizers will be included in the final program after a review by the Local Scientific Committee. Ordinary Members who want to organize such a session should contact the Local Arrangements Chair (`moehring@math.tu-berlin.de`) with their program and their request for time slots within the schedule of Short Communications.

All participants of these organized sessions have to submit an abstract for their Short Communication as indicated in Section D.3. The organizer of such a session should inform the Local Arrangements Chair about the submissions that belong to this session.

## B.6 Informal Seminars

During the Congress it will also be possible to organize informal mathematical seminars on site.

Ordinary Members who wish to organize such spontaneous seminars are asked to make all arrangements among themselves, and to request a room either in advance (`moehring@math.tu-berlin.de`), or during ICM'98 from the congress office or from the Local Arrangements Chair. Such seminars may take place during the afternoons. If the congress office is notified before 15:00 the previous day, an announcement of the seminar can be included in the daily newsletter to be distributed to all participants on the following day.

### B.7 Special Activities

Various suggestions for sessions of general mathematical interest have been brought to the attention of the Organizing Committee. In accordance with IMU and the Program Committee, the Organizing Committee has opened a new *Section of Special Activities* to cover the most important topics. This section is not part of the official scientific program as specified by the Program Committee. The section is still taking shape. It will probably include

- Sessions on **Mathematical Software.**
- A workshop entitled **Berlin as a Center of Mathematical Activity** organized by the International Commission on the History of Mathematics (ICHM).
- Talks, discussions, and roundtables related to **Electronic Publishing**.
- The **Noether Lecture,** a roundtable and a luncheon organized by a group representing *Women in Mathematics.*
- Further roundtables, e.g., on educational topics, and other events such as the presentation of O. Lehto's new book on the IMU.

The Deutsche Mathematiker-Vereinigung DMV will present an exhibition on the suppression and expulsion of mathematicians from the Berlin universities by the Nazis. There will also be lectures concerning the impact of the Nazi regime on mathematics.

## C. Other Events of Mathematical Interest

### C.1 Events for the General Public

The International Congress provides a unique opportunity to inform the general public about some of the recent developments and future challenges of mathematics. Planned are:

- A special lecture by Andrew Wiles (Princeton), on the development of number theory in the last twenty years.
- Several lectures for a general, in particular, non-mathematical audience.
- The VideoMath Festival, where films of mathematical interest are shown.
- The exhibition *Hands–on Mathematics,* aiming in particular at teachers and high school students.
- Small exhibitions related to mathematics, e.g. mathematical posters, mathematics and ceramics.

The lecture by Wiles will be in the Auditorium Maximum at TU Berlin, August 19, 19:30. All other presentations will take place in the evening, August 21–22 and 24–28 at the Urania, a lecture institute of long tradition situated not far from TU Berlin. (There will be a modest admission fee for some events at the Urania.) The exhibitions will be situated in the Urania and TU. You will find a detailed program on the WWW-server by June 1, 1998, and in the final program.

### C.2 Book Exhibitions etc.

Book, educational media, and computer software exhibits are located near the main lecture hall and in the large atrium in the main building of the University. They will be open on August 19–22 and 24–26 from 10:00 to 18:00, and on August 27 from 10:00 to 15:00. All participants are encouraged to visit the exhibits during the Congress.

### C.3 Other Mathematical Conferences

Traditionally there are several smaller conferences scheduled at various places immediately before or after the Congress. Starting on page 20, you find a list of such satellite conferences (as of December 1, 1997), together with the addresses where further information may be obtained. Please do not direct inquiries about these conferences to ICM'98.

## D. Publications

The material described in the items D.1–D.4 will be included in the registration package that each Ordinary Member will receive at the registration counter.

## D.1 Program

All Ordinary Members will receive copies of the official ICM'98 program. The program will show in detail the dates, times and locations of all Plenary and Invited Lectures. It will also contain a complete listing of all Short Communications and Poster presentations. See the ICM'98 WWW server, after June 1, 1998.

## D.2 List of Participants

A list of all participants who have registered by July 15, 1998 will be distributed to all Ordinary Members. A list of all ICM'98 members, including their mailing addresses, will be kept at the ICM'98 registration counter throughout the Congress. Ordinary Members are asked to check their own listing for accuracy while they are in Berlin, as this list will be used to prepare the official list of participants for inclusion in the Proceedings and to prepare mailing labels for shipment of the Proceedings.

## D.3 Abstracts

Abstracts of Plenary and Invited Lectures, Short Communications and Posters will be reproduced and distributed in printed form to all Ordinary Members at the beginning of the Congress. These abstracts will also be available on the internet under the following address:

`http://www.mathematik.uni-bielefeld.de/ICM98`

Abstracts of Short Communications and Posters should be written in English, French, Russian or German and should have the following form (compare also the enclosed example):

- Section Number (see B.3)
- 1991 Mathematics Subject Classification number (see N.)
- Name and affiliation of author(s)
- Title
- Abstract text (no more than 120 words)

Abstracts should be submitted electronically via the forms provided by the above WWW address or by e-mail using the subject "`ICM'98 abstract`" to

`rehmann@mathematik.uni-bielefeld.de`

TEX and html forms supporting electronic submission will be available under the above WWW address.

Submission is also possible by fax or by ordinary mail to

ICM'98 Abstracts
c/o Prof. Dr. Ulf Rehmann
Fakultät für Mathematik
Universität Bielefeld
Postfach 100131
D-33501 Bielefeld, Germany
Fax: +49 521 106-4743

**However, electronic submission is strongly encouraged.**

**The deadline for submission of abstracts is May 1, 1998.**

**Example Abstract**

**Section:** 2

**1991 MS Classification:** 17, 18, 55

Loday, Jean-Louis, Université de Strasbourg, France:
**Leibniz algebras and their (co)homology.**
A *Leibniz algebra* is a vector space equipped with a product satisfying a variation of the Jacobi identity: $[x, [y, z]] = [[x, y], z] - [[x, z], y]$. There is a dual notion in the sense of Koszul duality for operads. For any Leibniz algebra $\mathbf{g}$ there is a (co)homology theory $HL(\mathbf{g})$, which satisfies various properties including the following: $HL^*(\mathbf{g})$ is a dual Leibniz algebra. Applications to non-commutative rational homotopy theory will be presented. Part of these results is joint work with T. Pirashvili.

Reference: J.-L. Loday, and T. Pirashvili, Universal enveloping algebras of Leibniz algebras and (co)homology, *Math. Ann.* **296** (1993), 139–158.

## D.4 The Berlin Intelligencer

The *Mitteilungen* of the German Mathematical Society (DMV) and Springer-Verlag Berlin/Heidelberg will together prepare, publish, and present to all participants a magazine called the "Berlin Intelligencer", which is meant to welcome you to Berlin and to the ICM'98 and to guide your visit to Berlin and to some of its manifold aspects and attractions.

## D.5 Proceedings

All Plenary and Invited Lectures as well as the congress report will be published in the Proceedings of the International Congress of Mathematicians, Berlin, 1998. These Proceedings will appear as a special volume of =Documenta Mathematica

(Journal der Deutschen Mathematiker-Vereinigung), whose electronic version is available at

`http://www.mathematik.uni-bielefeld.de/documenta`
or `http://www.math.uiuc.edu/documenta`

A printed version will be distributed to all Ordinary Members of the Congress (except for the student members). There will also be a free internet version under the above WWW addresses.

### D.6 Daily News

A newsletter containing program changes, announcements of informal seminars and information of general interest to ICM'98 participants will be available each day at the TU conference office (H 2036). Participants with announcements for the newsletter should be sure to submit them to the conference office no later than 15:00 the day before.

## E. Social Program

### E.1 Opening Lunch Buffet

On August 18, from 12:30 to 14:30 (between the Opening Ceremony and the Afternoon Session) a complimentary lunch buffet will be offered to all participants. It will be served in the International Congress Center (ICC).

### E.2 ICM'98 Party

The Organizing Committee plans to stage a complimentary party for all participants. It will probably take place in the evening of August 26, 1998 on the campus of TU Berlin.

### E.3 Opera

On the evening of Sunday, August 23, at 19:30, a special performance of the opera ***The Magic Flute*** by Wolfgang Amadeus Mozart will be staged at the Deutsche Oper Berlin. For this performance, a large contingent of tickets has been reserved for participants of ICM'98. The tickets are available in five price categories, with prices ranging from 52 DM to 88 DM. Participants who wish to attend this special performance must purchase tickets in advance — using the registration form.

### E.4 Tourist Program

Several excursions (bus tours) will be offered by DER-CONGRESS during August 19–26, 1998. For a description of these tours see Section K.2

Reservations can be made on the registration form; if seats are left, it will also be possible to make bookings during the Congress (please contact the Tourist Program counter at TU Berlin). All tours will start in front of the TU Main Building, Str. des 17. Juni 135.

### E.5 Footloose Tours

To convey some of the many facets of Berlin to the ICM'98 participants, and in particular to accompanying persons, several Berlin mathematicians, their friends and spouses have volunteered to offer informal tours of Berlin including visits to special museums, sights, and shopping streets. The tours are free of charge, except for possible entrance fees. They will be announced shortly before the Congress by means of Circular Letters from the ICM'98 e-mail service. They will also be posted on the WWW-server of ICM'98 or during the Congress on an information board. It will be possible to register by e-mail. To maintain the informal character of the tours, group sizes are tightly restricted. Places will be assigned on a first–come–first–serve basis.

### E.6 Activities for Accompanying Persons

Accompanying persons do not have to register, see I.2. They are invited to participate in all activities of the social program. The Footloose Tours are especially planned for this group of visitors to guide them to nonstandard places of interest, to meet other people, and to explore Berlin in a casual way. Moreover, the events for the general public in the Urania, see C.1, are also intended for accompanying persons with some interest in mathematics.

# F. Travel

## F.1 Passports and Visas

For citizens of the countries of the European Community an identity card is sufficient. Citizens of other countries must be in possession of a valid passport, and for certain countries visas are required as well. Please consult the German Embassy or Consulate in your country for details. We have contacted the German Foreign Office on visa issues and do not expect difficulties. If you need a personal invitation to attend the Congress, you can request an official invitation letter (see Section H.2).

We advise you to apply for a visa at least three months before the date on which you plan to leave for Germany. If you have not received a visa one month before the beginning of ICM'98, contact us by fax or e-mail (SUBJECT: visa). In order to help you, we need the following information: name, address and date of birth, passport number, date and place of visa application.

## F.2 Congress Agents

DER-CONGRESS has been appointed by the Organizing Committee to handle registration for the Congress, hotel reservations, etc. for all individual participants of the Congress.

Please send all correspondence related to the Congress (inquiries, requests, etc.) to the official congress address, as indicated in A.2. DER-CONGRESS can be contacted directly at:

DER-CONGRESS
Congress Organisation
Bundesallee 56
D-10715 Berlin, Germany

Phone: +49 30 857 903-0
Fax: +49 30 857 903-26
E-Mail: `icm@der-congress.de`

Participants from Japan are requested to contact the official ICM'98 agent for Japan who will forward the registration form to DER-CONGRESS:

Nikkei Culture Inc.
Mr. Sumiyoshi
9-5, 1 Chome, Otemachi
Chiyoda-ku
Tokyo 100, Japan
Phone: (03) 5259 2666
Fax: (03) 5259 2664

## F.3 Arriving in Berlin

Berlin is easy to reach by all means of transportation. It has three airports, **Berlin Tegel** (aviation code TXL on your airline ticket), **Berlin Tempelhof** (THF) and **Berlin Schönefeld** (SXF). If you come to Berlin by train, you will arrive at one of the three main stations, which are **Zoologischer Garten** (in the western city center, walking distance to TU Berlin), **Lichtenberg** and **Hauptbahnhof** (both of them are in the east of Berlin and further away from ICM'98 activities). For more geographical details, see `http://www.berlin.de`

All airports and train stations are well connected to all main locations in Berlin by public transport — Berlin is well served by a far reaching network of bus, U-Bahn (subway) and S-Bahn (inner city railway) lines. The standard fare for a single ride AB-ticket that is valid on all busses, subways etc. will be DM 3.90. You will need this only on your day of arrival, since with the congress registration materials you will receive your Local Transportation Ticket (see F.4).

If you come by car, we suggest you leave it at the hotel and use the ICM'98 Local Transportation Ticket. There is ample parking space at the ICC, but parking is very limited at TU Berlin.

Many hotels are in the Western city center, close to the *Zoologischer Garten* ("Zoo Station") Train Station, which is not only a train station, but also a U-Bahn (subway) and S-Bahn (inner city railway) station with good connections in all directions. (To get to TU Berlin, for example, you would take the U2 subway line, direction *Ruhleben*, and leave it at the next stop, *Ernst-Reuter-Platz*).

In this section, we therefore explain how to reach *Zoologischer Garten* from the airports and from the other train stations. To locate your personal accommodation or hotel you might try to consult the Berlin city map which is online at

`http://www.kulturbox.de/perl/berlininfo`

Detailed city maps (including a street index) are also posted at all bus and subway stations in Berlin, which could help you to locate your destination after arrival in Berlin. The main connections to reach the congress locations are explained in Section F.5.

From **Tempelhof** Airport:

Take the U6 subway line, direction *Alt-Tegel*, up to the *Stadtmitte* station. There switch to the U2 subway line, direction *Ruhleben*, which will take you to the *Zoologischer Garten* station.

Duration: approx. 30 minutes.

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From **Schönefeld** Airport:

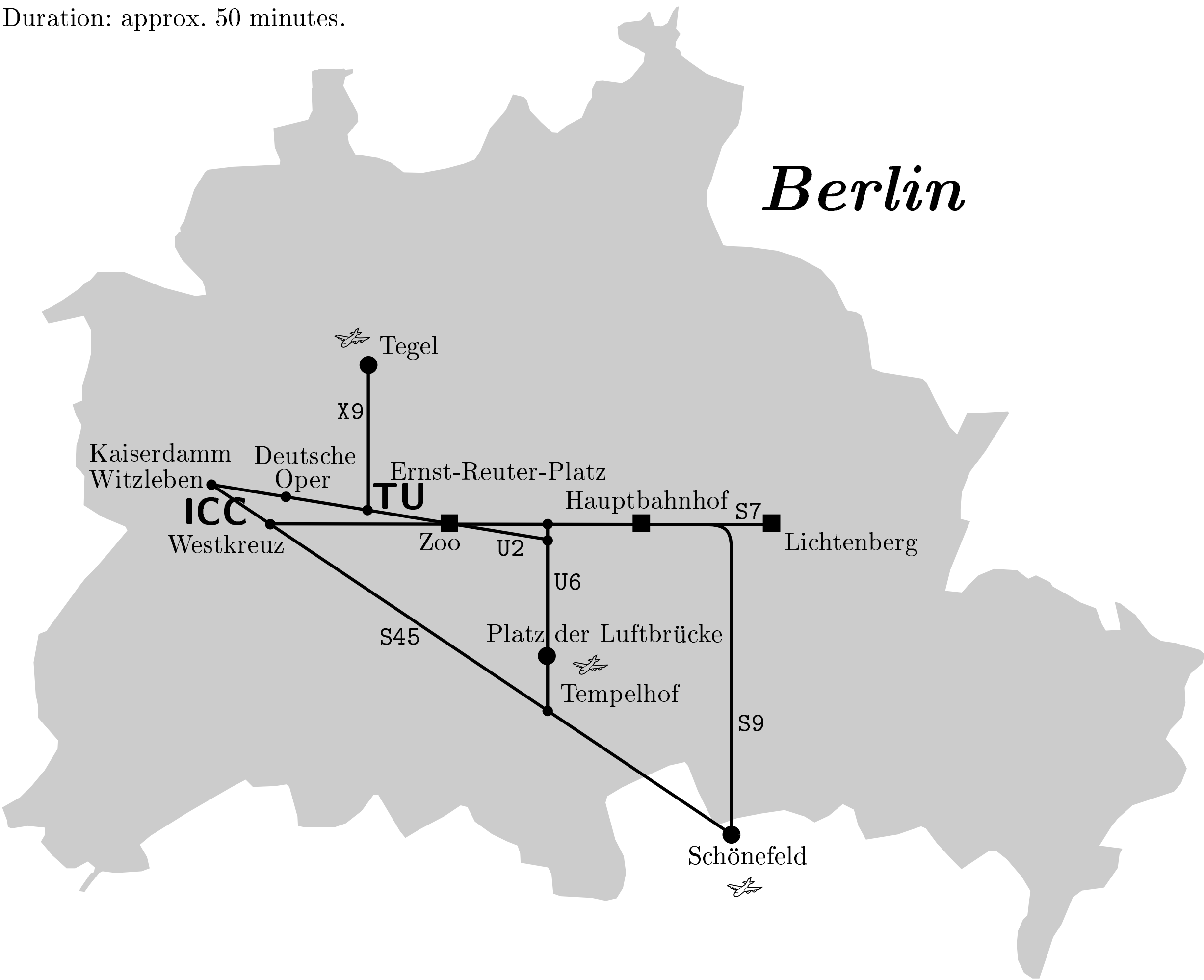
This airport is just outside the city limits, southeast of Berlin. To get to the center of Berlin, walk from the terminal building to the S-Bahn station. From there the S9 line will take you to *Zoologischer Garten*.

Duration: approx. 50 minutes.

From **Tegel** Airport:

The two bus lines with the numbers X9 and 109 operate the route to the city center. The X9 is a so-called express bus, which is fast, but makes only few stops. (But it does stop at TU's U-Bahn station, *Ernst-Reuter-Platz*.) The 109 bus is much slower, but it takes a route down *Kurfürstendamm* which is nice and convenient for the many hotels on and near this (main shopping) street. Both lines pass or end at *Zoologischer Garten*.

Duration: approx. 20 minutes with the X9 and approx. 30 minutes with the 109 bus.




From **Hauptbahnhof** train station:

This station is in the east of Berlin. Take one of the four S-Bahn lines operating from *Hauptbahnhof* in the western direction, whose destination may be *Potsdam Stadt*, *Westkreuz* or *Charlottenburg*. Any of these will take you to *Zoologischer Garten*.

Duration: approx. 20 minutes

From **Lichtenberg** train station:

This station is in the east of Berlin. From there two S-Bahn lines, S5 direction *Charlottenburg* and S7 direction *Potsdam Stadt*, will take you directly to the *Zoologischer Garten*.

Duration: approx. 30 minutes.

### F.4 Your Local Transportation Ticket

With your congress materials, distributed at registration in Berlin, you will receive a special ticket that is valid for all types of public transportation (*Bus, U-Bahn, S-Bahn*) in Berlin and in Potsdam, for the complete duration of the Congress (Aug. 17-27, 1998). The ticket is included in the registration fee. Additional such tickets, e.g. for accompanying persons, may be bought at the registration counter for DM 47,–.

### F.5 Reaching the Conference Locations

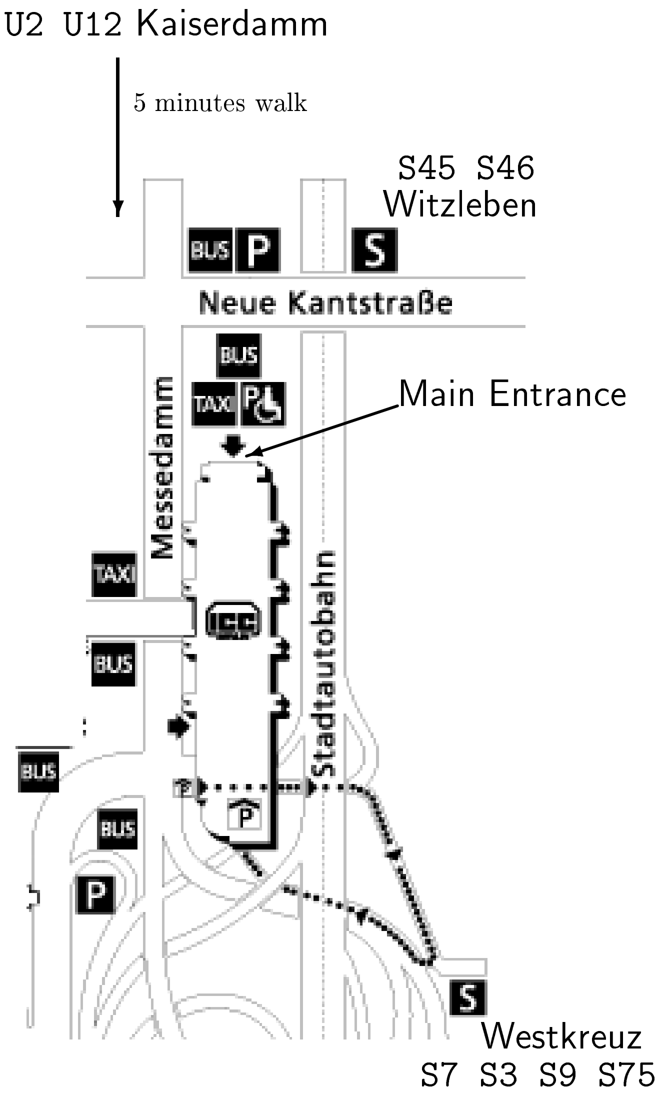
**TU Berlin** is located at *Ernst-Reuter-Platz*, which is a stop for the U2 subway line (one stop away from *Zoologischer Garten*), for the X9 express bus (from Berlin Tegel airport), and for the 145 and 245 bus lines. Leaving the *Ernst-Reuter-Platz* subway station take the exit marked *Technische Universität.* Above ground you will see the three conference buildings: the Architecture Building (A) with orange sun blinds right on Ernst-Reuter-Platz, the red-and-blue Math Building (MA), and the (huge white) Main Building (H), facing each other on the street called *Str. des 17. Juni* (see the map on page 11). TU Berlin is also located within walking distance from the S-Bahn station *Tiergarten.*

**To reach ICC** (e.g. from *Zoologischer Garten*, see F.3) take the subway line U2 until the stop *Kaiserdamm* and follow the *ICC* signs from there (a good 5 minutes walk). ICC is also served by the bus lines 104 (directly from Tempelhof airport) and by the X21, X49, 149, and 204 bus lines which all stop directly at ICC, by the S-Bahn line S45/46 (station *Witzleben*), and by the S-Bahn lines S3, S7, S75, and S9 (station *Westkreuz*, 5 minutes walk).

### F.6 Taxis (Cabs)

There is, of course, also the possibility to take a taxi. To get an idea about the costs, here are some typical prices:
Zoologischer Garten — ICC approx. 18 DM
✈ Tegel — ICC or TU Berlin approx. 25 DM
✈ Tempelhof — ICC or TU Berlin approx. 25 DM
✈ Schönefeld — ICC or TU Berlin approx. 70 DM
Lichtenberg — ICC or TU Berlin approx. 35 DM
Hauptbahnhof — ICC or TU Berlin approx. 30 DM

Please note that all the rates quoted here are average rates, based on normal traffic conditions.



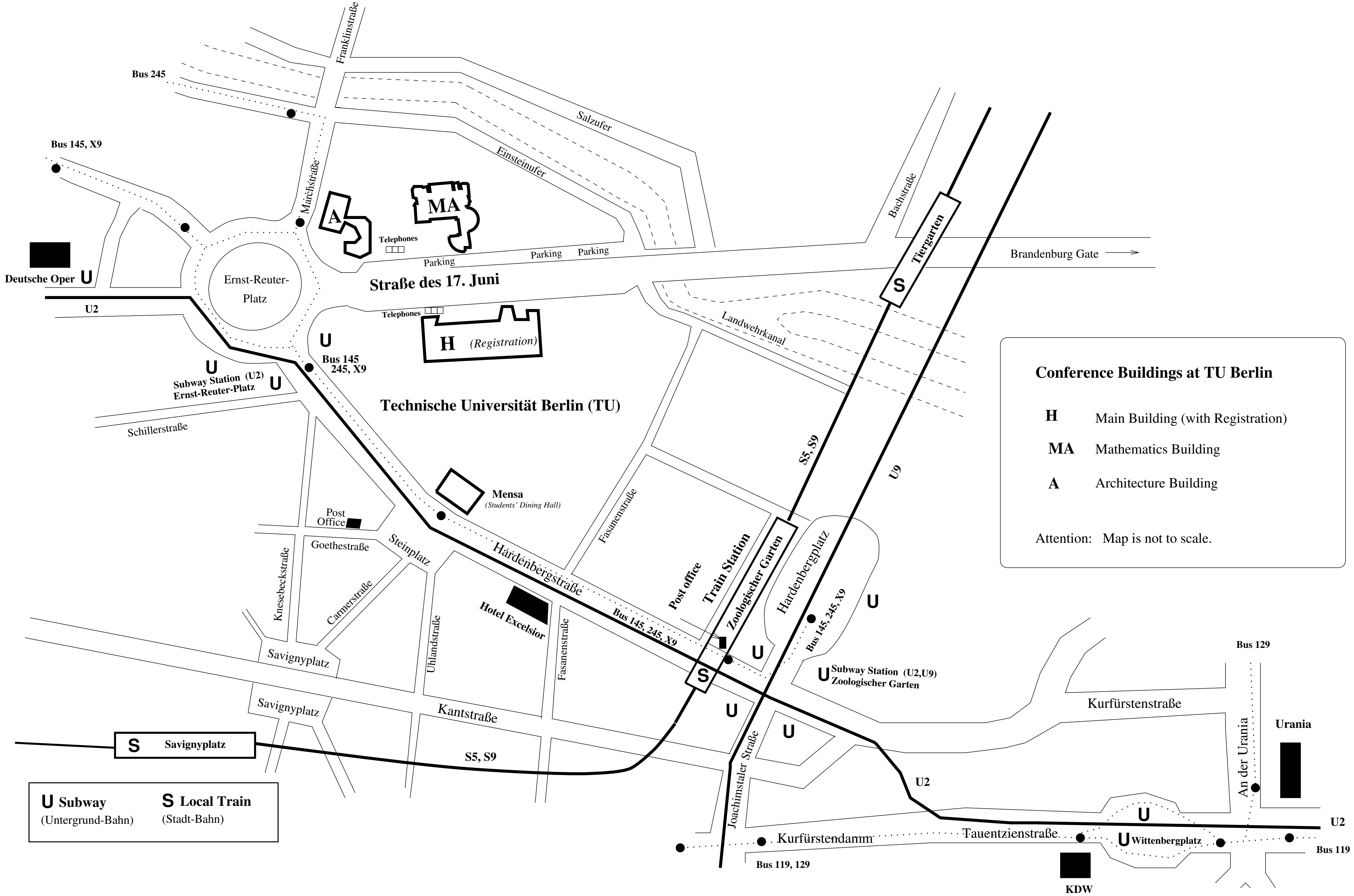

## G. Mail and Messages

### G.1 Mail

All mail, telegrams, and faxes for persons attending the Congress should be addressed to:

> Name of the Participant
> c/o ICM'98, Prof. Dr. J. Winkler
> TU Berlin, MA 8–2
> Str. des 17. Juni 135
> D-10623 Berlin, Germany
> Fax: +49 30 314-21604

Incoming items will be posted at the conference office in the main building.


Conference Buildings at TU Berlin
H Main Building (with Registration)
MA Mathematics Building
A Architecture Building
Attention: Map is not to scale.
U Subway
(Untergrund-Bahn)
S Local Train
(Stadt-Bahn)
Technische Universität Berlin (TU)
Straße des 17. Juni
Ernst-Reuter-Platz
H (Registration)
MA
A
Telephones
Parking
Franklinstraße
Marchstraße
Salzufer
Einsteinufer
Bachstraße
Tiergarten
Brandenburg Gate
Landwehrkanal
Bus 245
Bus 145, X9
Deutsche Oper
U2
Subway Station (U2)
Ernst-Reuter-Platz
Bus 145
245, X9
Schillerstraße
Mensa
(Students' Dining Hall)
Post Office
Goethestraße
Steinplatz
Knesebeckstraße
Carmerstraße
Hardenbergstraße
Hotel Excelsior
Uhlandstraße
Fasanenstraße
Bus 145, 245, X9
Post office
Train Station
Zoologischer Garten
Hardenbergplatz
S5, S9
U9
Subway Station (U2,U9)
Zoologischer Garten
Savignyplatz
Kantstraße
Joachimstaler Straße
Kurfürstenstraße
Bus 129
An der Urania
Urania
Kurfürstendamm
Tauentzienstraße
Wittenbergplatz
Bus 119
Bus 119, 129
KDW

### G.2 Telephone Messages

For urgent messages to a participant, call

+49 30 314-24105
or +49 30 314-25224.

To avoid mistakes, only simple messages will be taken and will be put in the respective mailbox. Unless it is a matter of life and death, it will not be possible for our secretarial staff either to check the presence of a specific person or to check whether the message actually reaches the intended person.

At the registration desk area at TU Berlin, there will be public phones accepting telephone-cards. Telephone-cards will be sold at the conference office.

### G.3 Personal Messages

Participants wishing to exchange personal messages during ICM'98 should use the mailboxes. We regret that messages left in the box after the Congress cannot be forwarded to participants.

### G.4 Public E-Mail Service

During the conference days public e-mail service will be available to Ordinary Members of ICM'98. For this, a pool of UNIX–workstations is offered, located in the TU Math-building (room MA 241). Opening hours during the Congress are from 9:00 to 18:00.

## H. Miscellaneous Information

### H.1 Official Languages

English, French, Russian, and German are the official languages of the Congress. Announcements, correspondence, and all other business matters will be carried out in English.

### H.2 Invitation Letter

An Official Invitation Letter will be sent by the Organizing Committee upon request (see the second page of the registration form). This personal invitation is intended only to facilitate participants' travel and visa arrangements, but we regret that we cannot provide any financial or other support.

### H.3 Libraries

Several (mathematics) libraries will be available for Ordinary Members of ICM'98. The reading room of the main library (main building H 3503) features a rich collection of reference works in all fields of science, especially of technology. The mathematics library is located in the building of the Department of Mathematics (MA 163). Please note that books cannot be checked out for any reason.

Libraries at TU Berlin are open Monday through Friday from 9:00 to 18:00.

Furthermore, there are also mathematics libraries at Freie Universität Berlin and at Humboldt–Universität Berlin. Please contact the conference office for additional information concerning addresses and opening hours.

### H.4 Climate and Clothing

The Congress takes place during late summer where the temperature is around $23^0$C ($73^0$F) during the day and $13^0$C ($55^0$F) at night. It may be useful to bring a sweater and raincoat.

### H.5 Electric Current

The electric current is 230 V (50 Hz). Please note that adapters may be necessary.

### H.6 Bank Services

The two closest banks, both within walking distance, are:

| | |
|---|---|
| Hypo Bank | Deutsche Bank |
| Ernst-Reuter-Platz 9–10 | Otto-Suhr-Allee 6 |
| 10585 Berlin | 10585 Berlin |

Opening hours are:

Monday and Wednesday 9:00–15:30
Tuesday and Thursday 9:00–18:00
Friday 9:00–12:30
Saturday and Sunday closed.

### H.7 Credit Cards

Participants are reminded that smaller shops and restaurants may not be prepared for credit card payment.

### H.8 Shopping Hours

Shopping hours are from 9:00–20:00 Monday to Friday and from 9:00 to 16:00 on Saturdays. All shops are closed on Sundays.

### H.9 First Aid and Health Insurance

The congress fee does not include insurance for the participants against accidents, sickness, or loss of personal property. All participants are strongly advised to make necessary arrangements for short–term health and accident insurance in advance. In any case, the organizers refuse all liability to cover health or accident expenses of participants unless expenses are due to an act of negligence by ICM'98.

During the conference, First Aid will be available in the main building. In case of emergency, please contact the registration counter, the congress office, or one of the lecture room attendees.

### H.10 Child Care

Child care can be arranged upon request.
Please contact the Local Arrangements Chair (`moehring@math.tu-berlin.de`).

## I. Registration

### I.1 Membership

It has been a long tradition to call any person who has registered for ICM'98 an *Ordinary Member* of the Congress. Registration is required in order to be admitted to the scientific program of the Congress. Ordinary members will receive a registration package including a congress badge, the program, an abstract book, one complimentary public transport ticket valid for the duration of the Congress, and other material at the registration counter as well as a complimentary copy of the Proceedings when published. Furthermore the registration fee includes the Opening Ceremonies with the Lunch Buffet, free coffee during coffee breaks, and the ICM'98 Party.

Please do wear your congress badge at all congress activities or whenever you want to be recognized as a congress member; in any case, be prepared to show the badge when asked to do so.

Students not having completed their PhD may choose to register at the reduced student rate by supplying an official student certificate of their university. Student registration does not include the Proceedings volume.

### I.2 Accompanying Persons

To minimize bureaucracy, accompanying persons will not be registered for ICM'98. However, accompanying persons are welcome to all social and public events of the Congress. For these occasions, blank name badges for accompanying persons will be available at the registration counter. Participants are encouraged to order additional public transport tickets (at reduced Congress rates of DM 47,–) for accompanying persons on the registration form.

### I.3 Registration

There are two possible ways for ICM'98 registration. You may register electronically using the WWW registration form on the ICM'98–Server with the following URL:

`http://elib.zib.de/ICM98/RegistrationForm.html`

Alternatively, you can complete the registration forms and return them to DER-CONGRESS, *as soon as possible.* **For participants who need hotel accommodation and ticket reservations for the tourist program we need the registration form by May 1, 1998.** Please note that all registrations have to be submitted on official registration forms. Please use a separate form for each participant. For additional copies of the registration form, please write to ICM'98 or copy the registration form. The registration will be considered as binding when it is received by DER-CONGRESS, and it will be confirmed as soon as the required fees have been received.

### I.4 Registration Fees

| Registration | until May 1, 1998 | after May 1, 1998 |
|---|---|---|
| Full registration fee | DM 450,– | DM 600,– |
| Students* | DM 200,– | DM 350,– |

*Registration as a student requires an official certificate of the university to be attached.

The registration fee includes all the conference materials and the Proceedings of the Congress (exept for students), a free public transportation ticket for the duration of the Congress (August 17–27, 1998), the Lunch Buffet at the Opening Ceremony, and the ICM'98-Party.

## I.5 Methods of Payment

The payment should be made in advance by one of the following methods:

a) bank cheque to be paid in German Currency (DM) to DER-CONGRESS

b) bank transfer in German Currency (DM) to DER-CONGRESS, Commerzbank AG Frankfurt/Main, Account no. 589 32 35, Sort Code 500 400 00. A copy of the remittance order must be attached to the registration form. *ICM'98* as well as the name of the participant (or, if payment is made for more than one person, all names) must be clearly marked on the remittance.

c) credit card: VISA / Diners Club / EUROCARD / MasterCard.

All fees for bank services which might occur have to be paid by the participants themselves and will, if not paid, be charged upon registration at the registration counter in the TU Berlin.

For details see the last page of the registration form.

## I.6 Cancellations and Changes

### Changes of Registration and Name Changes

A handling fee of DM 25,– will be charged for changes in registration except for name changes. These will be treated as cancellations and new registrations. The handling fee will not be charged if the complete registration is cancelled.

### Cancellation of Registration

The following fees will remain due if the cancellation for the Congress is received by DER–CONGRESS in written form by July 15, 1998:

| | |
|---|---|
| Participant | DM 150,– |
| Student | DM 100,– |

**No refund will be made for cancellations received after July 15, 1998.** The full fee is also payable if the participant does not show up at the Congress. Kindly note that only written cancellations can be accepted.

## I.7 Registration Counter

The registration counter is located in the main building, see map on page 11, of TU Berlin close to the Auditorium Maximum (H 105) where all Plenary Lectures will be given. The conference office (H 2036) is also located in the main building close to the large atrium of TU Berlin. The registration counter and the conference office will be operated during the following hours:

| | | |
|---|---|---|
| Monday, | August 17, 1998 | 14:00–20:00 |
| Tuesday, | August 18, 1998 | 8:00–20:00 |
| Wednesday, | August 19, 1998 | 8:00–20:00 |
| Thursday, | August 20, 1998 | 8:30–18:00 |
| Friday, | August 21, 1998 | 8:30–18:00 |
| Saturday, | August 22, 1998 | 8:30–18:00 |
| Sunday, | August 23, 1998 | closed |
| Monday, | August 24, 1998 | 8:30–18:00 |
| Tuesday, | August 25, 1998 | 8:30–18:00 |
| Wednesday, | August 26, 1998 | 8:30–18:00 |
| Thursday, | August 27, 1998 | 8:30–16:00 |

At this location, registered participants will receive their badges, congress documents, and their vouchers for all events that have been confirmed. The documents will not be mailed before the Congress. If fees have been forwarded late and therefore not yet been credited to the account of DER-CONGRESS on the day of arrival, a copy of the remittance order should be presented. The following credit cards will be accepted for on-site registration: VISA, EUROCARD, MasterCard, Diners Club.

On the opening day, there will be an additional information counter situated in the International Congress Center (ICC Berlin), which is open as follows:

| | |
|---|---|
| Tuesday, August 18, 1998 | 9:00–18:00 |

Kindly note that this counter is operated for information purposes only. Therefore you cannot register onsite and you will not receive your personal congress documents at this location.

**Everyone is invited to attend the ICM'98 Opening Day at ICC: Registration prior to this event is not necessary (but recommended).**

# J. Accommodation

## J.1 Hotels

Many (large and small) hotels in Berlin are located in the Western City Center, in convenient (walking) distance to Zoo station and TU Berlin. General information about hotels may be obtained from the ICM'98 WWW-site.

If you want to request accommodation for the Congress via DER-CONGRESS, please notify that using the WWW or the attached registration form. Please note that telephone requests cannot be accepted. Your requests for hotel reservation will be processed as soon as the pre-payment of DM 420,– per room, payable to DER-CONGRESS has been received. (This includes a hotel deposit of DM 400,– which will be deducted from your final hotel bill, and a handling fee of DM 20,– for DER-CONGRESS).

Please note that when all the hotel rooms of a particular category have been booked, DER-CONGRESS will no longer be able to guarantee further rooms in a desired hotel category, and thus reserves the right to confirm reservations in another category.

DER-CONGRESS will hand over the reservation lists to the hotels two weeks before the Congress. If changes should be necessary after that date, you are kindly requested to contact the hotel directly by fax, and to submit a copy to DER-CONGRESS.

If you plan to arrive at your hotel after 18:00 on the scheduled day of arrival, please mark this on your registration form, as reserved rooms will be kept until that time. If it is necessary to cancel your reservation, you are kindly requested to cancel until May 15, 1998. Later the hotels may charge non-occupancy fees to the customer. Please understand that in case of cancellation an administrative fee of DM 50,– per person will be charged.

You will receive the corresponding hotel voucher together with your congress documents at the registration counter: this voucher has to be presented to your hotel at some point during your stay, but not necessarily at your arrival.

**Group reservations** are possible. Please contact DER-CONGRESS for separate contracts.

## J.2 Private/Low Budget Accommodation

We are pleased to also offer the possibility to reserve accommodation in private households, until May 1, 1998. After that date DER-CONGRESS will not be able to guarantee that such rooms will be available. The prices per day are in the following range:

Single rooms from DM 62.– to 86.– incl. breakfast.
Double rooms from DM 86.– to 123.– incl. breakfast.
Apartments (double use) from DM 100.– to 150.– without breakfast.

Apartments and houses for more than two persons can be arranged on request.

The handling fee for the reservation in a private household is DM 30,– per person and will be charged by DER-CONGRESS.

Many of these rooms and apartments are equipped with TV and radio, and some also have a phone. However, most of the single and double rooms do not have a private bathroom. In this case the guests are usually sharing the bathrooms with their hosts. Apartments for two persons normally consist of one living/sleeping room, a kitchen, and a bathroom. At some apartments, you might have to pay a single fee of DM 40,– or 50,– for cleaning up after departure. In addition, some hosts would like to have a deposit in advance. Please be aware of the fact that some of the hosts may only be able to communicate in German.

A reservation form will be sent out by DER-CONGRESS upon receipt of the handling fee. Please fill in and return this form by fax or regular mail to DER-CONGRESS. The confirmation of reservation will be sent out directly afterwards, on which the address of the host is provided. To clarify all further details, such as time of arrival, payment conditions, etc. you should contact your host immediately after receipt. If you have not contacted your host four weeks prior to arrival at the latest, the reservation will be released without further notice.

Please understand that your host cannot process cheque or credit card payment, so kindly have cash ready on the day of arrival to cover the costs for the complete stay. Of course, pre-payment will be deducted.

Cancellations of private accommodation will be accepted free of charge until July 15, 1998. After that date the full amount for the stay is payable to the host if required. The handling fee cannot be reimbursed in any case.

## J.3 Student Dormitories

If you prefer a reservation of a bed in a student dormitory (prices range between DM 26,– and DM 41,– per bed, incl. breakfast) you can contact Youth Hostels in Berlin directly under the following address:

`http://www.jugendherberge.de/berlin.html`
Phone: +49 30 262-3024
Fax: +49 30 262-9529

Reservation can then be made on your own using fax or e-mail.

## J.4 Camping

`http://www.ecamp.de`

### J.5 Liability

In all cases DER-CONGRESS shall only act as an agent and shall not be liable for any losses, accidents, personal injury, or damage to property of any kind and origin whatsoever. The liability of the persons or companies instructed to provide the services shall not be affected. Amendments shall not be valid unless mutually agreed in writing and signed by the two contracting parties. The place of jurisdiction for fully qualified merchants, persons who do not have a general place of jurisdiction in Germany, and persons who have relocated their place of residence to a foreign country after the conclusion of the agreement shall be Frankfurt am Main.

## K. Social and Tourist Program

### Overview

| | Time | Price in DM |
|---|---|---|
| **Tuesday August 18, 1998** | | |
| Opening Ceremony in the ICC followed by a Lunch Buffet | 10:00–14:30 | free of charge |
| **Wednesday August 19, 1998** | | |
| City Sights | 9:00–12:00 | 40,– |
| From Prussian Kings to Egyptian Pharaohs | 13:00–17:00 | 45,– |
| **Thursday August 20, 1998** | | |
| Potsdam's Parks and Palaces | 8:00–18:00 | 150,– |
| City Sights with Visit to the Pergamon Museum | 10:00–14:00 | 50,– |
| Visit to the Hamburger Bahnhof | 14:00–17:30 | 40,– |
| **Friday August 21, 1998** | | |
| Dresden | 8:00–19:00 | 150,– |
| City Sights | 9:00–12:00 | 40,– |
| Boat trip on the River Havel | 13:30–17:15 | 55,– |
| **Saturday August 22, 1998** | | |
| Berlin's Famous Waterways | 9:45–12:15 | 50,– |
| City Sights with Visit to the Pergamon Museum | 10:00–14:00 | 50,– |
| Potsdam/Sanssouci | 13:00–17:00 | 65,– |
| **Sunday August 23, 1998** | | |
| Dresden | 8:00–19:00 | 150,– |
| Potsdam's Parks and Palaces | 8:00–18:00 | 150,– |
| Neuruppin and Rheinsberg Palace | 9:00–17:00 | 110,– |
| Impressions of the Spreewald | 9:00–17:00 | 125,– |
| From Prussian Kings to Egyptian Pharaohs | 10:00–14:00 | 45,– |
| City Sights with Visit to the Pergamon Museum | 13:00–17:00 | 50,– |
| City Sights | 14:00–17:00 | 40,– |
| Visit to the Hamburger Bahnhof | 14:00–17:30 | 40,– |
| Deutsche Oper ***The Magic Flute*** | 19:30 h | 52,– to 88,– |
| **Monday August 24, 1998** | | |
| City Sights | 9:00–12:00 | 40,– |
| Boat trip on the River Havel | 13:30–17:15 | 55,– |
| **Tuesday August 25, 1998** | | |
| Berlin's Famous Waterways | 9:45–12:15 | 50,– |
| City Sights with Visit to the Pergamon Museum | 10:00–14:00 | 50,– |
| Potsdam/Sanssouci | 13:00–17:00 | 65,– |
| **Wednesday August 26, 1998** | | |
| City Sights | 9:00–12:00 | 40,– |
| ICM'98 Party | 18:00–open end | free of charge |

All bus tours start in front of the TU Berlin, Main Building, Str. des 17. Juni 135. Please note that the return times of the bus tours are approximate and depend on traffic conditions. Luncheons do not include beverages. The program is subject to change. All tours are provided with English speaking guides.

# Outline of the Program

| | | | |
|---|---|---|---|
| Tue., Aug. 18 | Opening Ceremony and Prize Winners; Lunch Buffet | Laudationes and Plenary Lecture | |
| Wed., Aug. 19 | Plenary Lecture; Plenary Lecture | Invited Lectures, Communications, Posters; Invited Lectures, Communications, Posters | Special Lecture A. Wiles |
| Thu., Aug. 20 | Plenary Lecture; Plenary Lecture | Invited Lectures, Communications, Posters; Invited Lectures, Communications, Posters | Urania Activities, Popular Lectures, Exhibitions |
| Fri., Aug. 21 | Plenary Lecture; Plenary Lecture | Invited Lectures, Communications, Posters; Invited Lectures, Communications, Posters | Urania Activities, Popular Lectures, Exhibitions |
| Sat., Aug. 22 | Plenary Lecture; Noether Lecture | Invited Lectures, Communications, Posters; Invited Lectures, Communications, Posters | Urania Activities, Popular Lectures, Exhibitions |
| Sun., Aug. 23 | Optional Excursions | | Opera |
| Mon., Aug. 24 | Plenary Lecture; Plenary Lecture; Plenary Lecture | Invited Lectures, Communications, Posters; Invited Lectures, Communications, Posters | VideoMath-Festival |
| Tue., Aug. 25 | Plenary Lecture; Plenary Lecture; Plenary Lecture | Invited Lectures, Communications, Posters; Invited Lectures, Communications, Posters | VideoMath-Festival |
| Wed., Aug. 26 | Plenary Lecture; Plenary Lecture; Plenary Lecture | Invited Lectures, Communications, Posters; Invited Lectures, Communications, Posters | ICM'98 Party |
| Thu., Aug. 27 | Plenary Lecture; Plenary Lecture; Plenary Lecture | Plenary Lecture, Closing Ceremony | Urania |

## K.1 Social Events

### Opening Lunch Buffet

| | |
|---|---|
| Date: | August 18, 1998 |
| Time: | 12:30–14:30 (after Opening Ceremony) |
| Place: | International Congress Center Berlin<br>ICC Berlin<br>Messedamm 22/Entrance Neue Kantstraße<br>14055 Berlin |

Public Transportation: U-Bahn line 2, station *Kaiserdamm*, bus routes 104, 105, 149, 219, 700 and S-Bahn lines 45/46, station *Witzleben*, lines 3/7/9/75, station *Westkreuz*.

### ICM'98 Party

Probable Date: August 26, 1998
Time: 18:00 after the lectures
Place: Campus of the TU Berlin
Public Transportation: U-Bahn line 2, station *Ernst-Reuter-Platz*

### Opera: *The Magic Flute*

| | |
|---|---|
| Date: | August 23, 1998 |
| Time: | 19:30 h |
| Place: | Deutsche Oper<br>Bismarckstr. 35<br>10627 Berlin |

Public Transportation:
U-Bahn line U2, station *Deutsche Oper*

| | | |
|---|---|---|
| Categories*: | 1. Upper circle | DM 52,– |
| | 2. Stalls (row 21-26) | DM 55,– |
| | 3. Dress circle (row 3-7) | DM 75,– |
| | 4. Stalls (row 14-20) | DM 77,– |
| | 5. Stalls (row 10-13) | DM 88,– |

*If tickets in the desired category are sold out, tickets in another category will be reserved and confirmed by DER-CONGRESS.

## K.2 DER-CONGRESS Tourist Program

### City Sights with Visit to the Pergamon Museum

This tour takes you to the historical and modern centers of Berlin and gives impressions of its culture, history, and open-minded inhabitants. You will see places of interest around the famous *Kurfürstendamm* and the historic part of *Berlin-Mitte*, for example the Kaiser Wilhelm Memorial Church, New National Gallery, the French and German Cathedrals, Brandenburg Gate and the Reichstag, the avenue *Unter den Linden* and much more. The Pergamon Museum houses a collection of antiquities as well as the famous altar of Pergamon, the Ishtar Gate and the Marketgate of Milet.

| | | |
|---|---|---|
| Thursday, | August 20, 1998 | 10:00–14:00 |
| Saturday, | August 22, 1998 | 10:00–14:00 |
| Sunday, | August 23, 1998 | 13:00–17:00 |
| Tuesday, | August 25, 1998 | 10:00–14:00 |

DM 50,– per person

### Dresden

On the way to Dresden you will pass by the lake *Teupitzer See*, some distant parts of the Spreewald and the coal mining area of Niederlausitz. Dresden is one of the most beautiful baroque towns in Europe. After a sightseeing tour through the city and lunch you will visit the picture gallery *Old Masters* with the famous painting *Sixtinische Madonna* or the dazzling jewellery exhibition in the *Green Vault,* or you can discover the city on your own. On the return journey to Berlin you will have a look at the famous china factory in Meissen where you can witness the production of the *white gold*, as the delicate porcelain is called.

| | | |
|---|---|---|
| Friday, | August 21, 1998 | 8:00–19:00 |
| Sunday*, | August 23, 1998 | 8:00–19:00 |

DM 150,– per person

*Please note: Should you decide to attend the Dresden tour on Sunday the time remaining will not be sufficient to join ***The Magic Flute*** in the Opera as well.

### City Sights

This tour takes you to the historical and modern centers of Berlin and gives you a feeling for the culture, history, and inhabitants. You will see places of interest around the famous *Kurfürstendamm* and *Berlin-Mitte*, for example the Kaiser Wilhelm Memorial Church, the New National Gallery, the French and German Cathedral, the Reichstag with the Brandenburg Gate as well as the avenue *Unter den Linden.*

| | | |
|---|---|---|
| Wednesday, | August 19,1998 | 9:00–12:00 |
| Friday, | August 21,1998 | 9:00–12:00 |
| Sunday, | August 23,1998 | 14:00–17:00 |
| Monday, | August 24,1998 | 9:00–12:00 |
| Wednesday, | August 26,1998 | 9:00–12:00 |

DM 40,– per person

**Boat Trip on the River Havel**

A substantial part of Berlin consists of lakes, rivers, and forests. Enjoy the unique forest, the beautiful sandy bays, and the tree-shaded shores of Lake Wannsee, Lake Stölpchensee, Lake Griebnitzsee, see the Peacock Island from the waterside. Coffee and cake included.

| | | |
|---|---|---|
| Friday, | August 21, 1998 | 13:30–17:15 |
| Monday, | August 24, 1998 | 13:30–17:15 |

DM 55,– per person

**Berlin's Famous Waterways**

This river cruise on the Spree presents you the historic center of the city with its most important sights from a completely different angle. Coffee and cake included.

| | | |
|---|---|---|
| Saturday, | August 22, 1998 | 9:45–12:15 |
| Tuesday, | August 25, 1998 | 9:45–12:15 |

DM 50,– per person

**Neuruppin & Rheinsberg Palace**

This will be a coach trip to the little town of Neuruppin which is situated on the lake *Ruppiner See*. During a sightseeing tour you will get to know the home town of Theodor Fontane and Karl Friedrich Schinkel. After lunch the trip continues to Rheinsberg, a *picture book for lovers* as Tucholsky called it. The town, which is situated on the east bank of the *Griebericksee*, is famous in particular for its palace, Schloß Rheinsberg. It was built in 1566 as a moated castle, and was reconstructed in 1737/40 by Knobelsdorff into a major architectural work during Friedrich the Great's reign. The Rheinsberg Palace houses a museum which is open to the public. The tour includes a walk through the palace gardens, which were originally designed in Baroque-style and changed into English-style gardens at the end of the 18th century.

Sunday, August 23, 1998 9:00–17:00

DM 110,– per person

**From Prussian Kings to Egyptian Pharaohs**

Charlottenburg Palace used to be the summer residence of the Prussian kings. The Palace was renovated with much care and houses a collection of paintings by Watteau, Caspar David Friedrich, and Spitzweg. The Egyptian Museum in Charlottenburg is the home of a collection of more than 1500 exhibits, which originated from all dynasties of Ancient Egypt including the famous bust of Queen Nefertiti and the Pharaoh Echnaton.

| | | |
|---|---|---|
| Wednesday, | August 19, 1998 | 13:00–17:00 |
| Sunday, | August 23, 1998 | 10:00–14:00 |

DM 45,– per person

**Impressions of the Spreewald**

This day-tour to the Spreewald offers an unparalleled experience of nature. The area, which was originally settled by the Sorbs, is traversed by numerous arms of the River Spree, these often being the only links between houses and fields. The tour will take you to Burg and Leipe, two small idyllic towns in a romantic setting. Spreewald specialities will be served at lunch. Enjoy a trip along the network of waterways on one of the traditional Spreewald punts.

Sunday, August 23, 1998 9:00–17:00

DM 125,– per person

**Potsdam's Parks and Palaces**

Potsdam is famous for its splendid palaces and gardens. The palace of Sanssouci in Potsdam was a favourite refuge of the great Prussian King Friedrich II. Here, the *philosopher of Sanssouci*, as he was called, entertained some of the most educated men of his time, among them the French philosopher Voltaire. A visit of the palaces and gardens of Sanssouci will be followed by a guided tour to the Cecilienhof, the place where the Potsdam Agreement was signed in 1945. This excursion will also include a city tour of the small garrison town with its Dutch Quarters and Russian Colony as well as a lunch in a typical German restaurant.

| | | |
|---|---|---|
| Thursday, | August 20, 1998 | 8:00–18:00 |
| Sunday, | August 23, 1998 | 8:00–18:00 |

DM 150,– per person

**Potsdam/Sanssouci**

This tour shows old and modern Potsdam. You will visit the well-preserved, worldfamous Rococo Palace Sanssouci with its art treasures and beautiful park. A city tour through Potsdam and its surroundings will follow.

| | | |
|---|---|---|
| Saturday, | August 22, 1998 | 13:00–17:00 |
| Tuesday, | August 25, 1998 | 13:00–17:00 |

DM 65,– per person

**Visit to the Hamburger Bahnhof**

In November 1996, the newly renovated Hamburger Bahnhof was opened as the Museum for Contemporary Art, Berlin. The Hamburger Bahnhof has approximately 10,000 qm of exhibition space for the Collection of Erich Marx. The Marx Collection is composed primarily of works by major artists from the past thirty years such as Joseph Beuys, Andy Warhol, Robert Rauschenberg, Cy Twombly, Roy Lichtenstein, and Anselm Kiefer. Above and beyond these artists, the collection shows also works by painters of the Italian Transavanguardia, of Minimal Art, and the *Junge Wilden* (*Wild Youth*) painters from Berlin. The renovation and partial rebuilding of the former terminal train station is the realization of plans by Josef Paul Kleihues.

| | | |
|---|---|---|
| Thursday, | August 20, 1998 | 14:00–17:30 |
| Sunday, | August 23, 1998 | 14:00–17:30 |

DM 40,– per person

### K.3 Cancellation

In case of cancellation of tours or tickets for the Deutsche Oper after June 15, 1998, the full fee must be paid. There will be no refunds. The tours will only take place if there is a minimum number of participants. If this condition is not fulfilled by the registration deadline, the tour will be cancelled and the amount paid refunded. No further claims can be accepted. If the participants choose some other means of transportation, no refunds will be made. Participants who do not show up for the tour are not eligible for refunds.

## L. Satellite Conferences

• **Algebraic and Arithmetic Geometry.** Ruhrgebiet, Germany; August, 10–15. Organizing Committee: H. Esnault (Essen), G. Frey (Essen), E. Viehweg (Essen), G. Faltings (MPI Bonn).
Contact address: `icm.sat@uni-essen.de`

• **Algebraic Number Theory and Diophantine Analysis.** Graz, Austria; August, 31–September, 4. Organizing Committee: F. Halter-Koch, W. Tichy (Graz).
Contact address: `tichy@ftug.th-graz.ac.at`

• **Analysis and Control of Differential Systems.** Constanta, Romania, August 10-15. Organizing Committee: V. Arnatu (Iasi), D. Tiba (Bucharest). Contact address: `dtiba@imar.ro`

• **XII-th Conference on Analytic Functions.** Lublin, Poland, August 30 to September 5. Organizing Committee: J. G. Krzyz (Lublin), J. Lawrynowicz (Lodz and IM PAN), J. Siciak (Krakow), J. Szynal (Lublin), E. Zlotkiewicz (Lublin), M. Nowak – secretary.
Contact address: `nowakm@golem.umcs.lublin.pl`

• **Commutative Algebra in Honour of David Rees's 80th Year.** Exeter, England; August, 13-16. Organizing Committee: R. Y. Sharp (Sheffield) and P. Vámos (Exeter).
Contact address: `car-meet@maths.ex.ac.uk`

• **Computer Algebra ISSAC 98.** Rostock, Germany; August, 13–15. Organizing Committee: (General Chair) V. Weispfenning, B. Trager, R. M. Corless, A. Widiger, K. Hantzschmann, J. Apel, O. Gloor. Contact address:
`issac98@alice.fmi.uni-passau.de`

• **Conformal geometry and geometric function theory.** Berlin; August, 11–15. Organizing Committee: M. Bonk, Chr. Pommerenke, S. Rohde (TU Berlin).
Contact address: `rohde@math.tu-berlin.de`

• **The Fourth International Conference on Difference Equations and Applications.** Poznan, Poland, August 27-31. Organizing Committee: A. Gleska, K. Janglajew, A. Marlewski (secretary), J. Morchalo (vice-chairman), Z. Pawlak, J. Rakowski (chairman), E. Schmeidel. Contact address: `icdea98@math.put.poznan.pl`

• **Differential Geometry and Applications.** Brno, Czech Republic; August, 10–14. Program Committee: O. Kowalski (Prague) and P. W. Michor (Vienna), co-chairmen; D. Alekseevski (Moscow), T. Friedrich (Berlin), I. Kolar (Brno), D. Krupka (Opava).
Contact address: `kowalski@karlin.mff.cuni.cz`

• **1st Conference of the European Society for Research in Mathematics Education.** Osnabrück, Germany, August 27-31. Program Committee E. Cohors-Fresenborg (Osnabrück, Germany) M. Hejny (Prague, Czech Republic) B. Jaworski (Oxford, United Kingdom) J. da Ponte (Lisbon, Portugal) A. Rouchier (Orleans, France). Contact address: `erme@mathematik.uni-osnabrueck.de`

• **Empirical Processes in Non- and Semiparametric Statistics.** Berlin; August 31 – September 3. Local organizers: E. Mammen (Heidelberg), M. Nussbaum (WIAS Berlin).
Contact address: `satellite@wias-berlin.de`

• **Function Spaces V.** Poznan (Poland), August 28 to September 3. Organizing Committee: Z. Ciesielski, H. Hudzik, J. Musielak, Prof. M. Nowak and L. Skrzypczak.

Contact address: `funsp5@math.amu.edu.pl`

• **Conference on Functional Analysis, Partial Differential Equations, and Applications.** Rostock, Germany, August 31-September 4. Organizing Committee: G. Wildenhain, S. Prößdorf, P. Takac, J. Roßmann. Contact address:
`juergen.rossmann@mathematik.uni-rostock.de`

• **Geometric Combinatorics.** Montenegrin Adriatic coast, Yugoslavia, August 28 – September 4. Organizing Committee: I. Barany (Budapest), S. Vrecica (Belgrade), R. Zivaljevic (Belgrade). Contact address: `geomcom@matf.bg.ac.yu`

• **Geometric Methods in Fourier and Functional Analysis.** Kiel, Germany; August, 10–14. Organizing Committee: H. König (Kiel), D. Müller (Kiel) J. Lindenstrauss (Jerusalem), E. M. Stein (Princeton).
Contact address: `conf98@math.uni-kiel.de`

• **Geometry and Topology.** Aarhus, Denmark; August, 10–16. Organizing Committee: K. Grove, I. Madsen, E. K. Pedersen. Contact address: `tag98@mi.aau.dk`

• **Graph Theory.** Hindsgavl, Denmark; August, 9–15. Organizing Committee: B. Toft (Odense).
Contact address: `btoft@imada.ou.dk`

• **International Conference on the History of Computing.** Paderborn, Germany; August, 14-16. Organizing Committee: R. Rojas (Berlin), U. Hashagen (Paderborn), G. Widiger (Berlin).
Contact address: `rojas@inf.fu-berlin.de`

• **History of Mathematics (ISHIM '98).** Göttingen, Germany, August, 10-14. Organizing Committee: H. J. Becker (Göttingen), D. Rowe (Mainz), P. Ullrich (Münster). Contact address: `ISHIM98@www.sub.uni-goettingen.de`

• **Junior Mathematical Congress.** Potsdam, Germany, August, 17-22. Local Organizing Committee: A. Brückner, M. Fritzsche, R. Gutschmidt, T. Jahnke, Chr. Saalfrank, H.-J. Sprengel, M. Weese.
Contact address: `junmc98@rz.uni-potsdam.de`

• **Lattice Theory and Universal Algebra.** Szeged, Hungary; August, 3-7. Organizers: G. Czédli, L. Zádori and T. Géza.
Contact address: `algebra@math.u-szeged.hu`

• **Linear Algebraic Groups and Related Structures.** Bielefeld; August, 10–14. Organizing Committee: I. Kersten (Bielefeld), A. Merkurjev (St. Petersburg), U. Rehmann (Bielefeld). Contact address:
`rehmann@mathematik.uni-bielefeld.de`

• **Logic.** FU Berlin, Germany; August, 28–30. Organizing Committee: A. Baudisch (HU Berlin), R. B. Jensen (HU Berlin), S. Koppelberg (FU Berlin).
Contact address: `sabina@math.fu-berlin.de`

• **Logic Colloquium 1998.** Praha, Czech Republic, August 9–15. Local Organizing Committee chair: P. Hajek (Institute of Computer Science, Prague, Czech Republic). Contact address: `lc98@math.cas.cz`

• **International Conference on Operations Research 1998 (OR'98).** Zürich, Switzerland; August 31 – September 3. President of the Organizing Committee: H.-J. Lüthi.
Contact address: `luethi@ifor.math.ethz.ch`

• **Partial Differential Equations (Theory and Numerical Solutions).** Prague, Czech Republic; August 10-16. Chairman: J. Necas (Prague), W. Jäger (Heidelberg). Contact address: `pde98@karlin.mff.cuni.cz`

• **Poisson Geometry.** Warsaw, Poland; August, 3–15. Organizing Committee: J.-P. Dufour (Montpellier), J. Grabowski (Warsaw), A. Weinstein (Berkeley), S. Zakrzewski (Warsaw), M. Zhitomirskii (Haifa). Contact address: `szakrz@fuw.edu.pl`

• **International Conference dedicated to the 90th Anniversary of L. S. Pontryagin.** Steklov Institute of Mathematics Moscow, Russia, August, 31 to September, 6. Organizing Committee: Co-Chairmen: Yu. S. Osipov, V. A. Sadovnichii Vice-Chairmen: R. I. Grigorchuk, A. B. Kurzhanskii, A. S. Mishchenko.
Contact address: `pont@genesis.mi.ras.ru`

• **Representation Theory of Algebras.** Bielefeld, Germany, August 31 to September 5. Organizing Committee: D. Happel (Chemnitz), H. Lenzing (Paderborn), C. M. Ringel (Bielefeld), K. W. Roggenkamp (Stuttgart). Contact address: C. M. Ringel, Fakultät für Mathematik, Universität Bielefeld, POBox 100 131, D-33501 Bielefeld, Germany.

• **Representations of finite groups and combinatorics.** Magdeburg, Germany; August, 10–14. Organizing Committee: C. Bessenrodt (Magdeburg), A. Morris, J. B. Olsson (Kopenhagen).
Contact address: `icmsat98@uni-magdeburg.de`

• **Colloquium on Topology.** Gyula, Hungary, August, 9-15. Organizing Committee: A. Csaszar (chairman). Contact address: `gyula@math-inst.hu`

## M. ICM'98 Sponsors

To make ICM'98 attractive for as many mathematicians as possible the local Organizing Committee has set a registration fee that is quite modest compared to the length and the size of the Congress and compared to the service that will be offered and included in the fee.

Nevertheless, there will still be many mathematicians for whom participation is economically unaffordable. To help at least some of them attend ICM'98, large support programs have been set up by the ICM'98 Organizing Committee in cooperation with the International Mathematical Union. These programs offer financial support for active young as well as mature mathematicians from developing countries and for mathematicians from Eastern Europe. Details can be found in the ICM'98 World Wide Web server.

The costs of organizing an event such as ICM'98 in a big city like Berlin are enormous. To keep them as low as possible, the ICM'98 organization depends – to a very large extent – on the dedication, time, and energy of many volunteers from the Berlin universities and mathematical research institutes as well as on the help of many colleagues throughout Germany. In addition to working free of charge they often cover arising costs from their own or other sources. The Organizing Committee would like to thank all persons and institutions involved.

Even with all this help, it would still be impossible to finance a large and costly event such as ICM'98 by registration fees only. The organizers are grateful to the

- Bundesministerium für Bildung, Wissenschaft, Forschung und Technologie
- Senat von Berlin
- Deutsche Forschungsgemeinschaft
- Land Sachsen

for their substantial financial contributions to the organization of ICM'98. Generous support has also been obtained from foundations and companies. Sponsoring from industry is hard to obtain in economically hard times, and we are particularly grateful to companies who recognize the importance of mathematics. The final list of sponsors will be announced at the Congress and published in the proceedings volume. Up to now financial contributions have been obtained from

- Allianz Lebensversicherung
- Siemens AG
- Stemmler-Stiftung
- Silicon Graphics
- Deutsche Telekom
- Herlitz AG
- Springer Verlag
- Nikkei Culture
- Minolta
- Sender Freies Berlin
- SUN Microsystems

We would also like to express our thanks for contributions from the International Mathematical Union, the Deutsche Mathematiker-Vereinigung, and the Deutsche Gesellschaft für Versicherungsmathematik. Donations have been given by many mathematicians from all over the world who particularly contributed to the funds for the support programs for mathematicians from developing countries and Eastern Europe.

Finally, we would like to thank the state of Saxony, one of the sixteen German states, who helped to make the IMU General Assembly possible.

**The IMU General Assembly will take place in Dresden, Saxony, from August 15 to 16, directly before ICM'98.**

## N. 1991 Mathematics Subject Classification

| | |
|---|---|
| 0 | General |
| 1 | History and biography |
| 3 | Mathematical logic and foundations |
| 4 | Set theory |
| 5 | Combinatorics |
| 6 | Order, lattices, ordered algebraic structures |
| 8 | General algebraic systems |
| 11 | Number theory |
| 12 | Field theory and polynomials |
| 13 | Commutative rings and algebras |
| 14 | Algebraic geometry |
| 15 | Linear and multilinear algebra; matrix theory |
| 16 | Associative rings and algebras |
| 17 | Nonassociative rings and algebras |
| 18 | Category theory, homological algebra |
| 19 | $K$-theory |
| 20 | Group theory and generalizations |
| 22 | Topological groups, Lie groups |
| 26 | Real functions |
| 28 | Measure and integration |
| 30 | Functions of a complex variable |
| 31 | Potential theory |
| 32 | Several complex variables and analytic spaces |
| 33 | Special functions |
| 34 | Ordinary differential equations |
| 35 | Partial differential equations |
| 39 | Finite differences and functional equations |
| 40 | Sequences, series, summability |
| 41 | Approximations and expansions |
| 42 | Fourier analysis |
| 43 | Abstract harmonic analysis |
| 44 | Integral transforms, operational calculus |
| 45 | Integral equations |
| 46 | Functional analysis |
| 47 | Operator theory |
| 49 | Calculus of variations and optimal control; optimization |
| 51 | Geometry |
| 52 | Convex and discrete geometry |
| 53 | Differential geometry |
| 54 | General topology |
| 55 | Algebraic topology |
| 57 | Manifolds and cell complexes |
| 58 | Global analysis, analysis on manifolds |
| 60 | Probability theory and stochastic processes |
| 62 | Statistics |
| 65 | Numerical analysis |
| 68 | Computer science |
| 70 | Mechanics of particles and systems |
| 73 | Mechanics of solids |
| 76 | Fluid mechanics |
| 78 | Optics, electromagnetic theory |
| 80 | Classical thermodynamics, heat transfer |
| 81 | Quantum Theory |
| 82 | Statistical mechanics, structure of matter |
| 83 | Relativity and gravitational theory |
| 85 | Astronomy and astrophysics |
| 86 | Geophysics |
| 90 | Economics, operations research, programming, games |
| 92 | Biology and other natural sciences, behavioral sciences |
| 93 | Systems theory; control |
| 94 | Information and communication, circuits |

## O. Organizing Committee

The Organizing Committee was set up in 1994 and has been growing since. At the moment of this writing the following people are involved:

| | |
|---|---|
| M. Grötschel | TU Berlin and ZIB (President) |
| F. Hirzebruch | MPI Bonn (Honorary President) |
| M. Aigner | FU Berlin (Vice-President) |
| J. Sprekels | HU Berlin and WIAS (Finances) |
| J. Winkler | TU Berlin (Secretary) |
| R. Möhring | TU Berlin (Local Arrangements) |

| | |
|---|---|
| E. Behrends | FU Berlin |
| G. Berendt | FU Berlin |
| A. Beutelspacher | U Giessen |
| J. Brüning | HU Berlin |
| W. Dalitz | ZIB |
| G. Fischer | U Düsseldorf (Proceedings) |
| G. Frey | U Essen |
| U. Fuchs | FU Berlin |
| S. Hartmann | TU Berlin |
| C. Helmberg | ZIB |
| K.H. Hoffmann | TU München |
| H. Kurke | HU Berlin |
| E. Letzner | FU Berlin |
| M. Pohst | TU Berlin (Chair Local Scientific Committee) |
| K. Radbruch | U Kaiserslautern |
| U. Rehmann | U Bielefeld (Abstracts, Proceedings) |
| W. Römisch | HU Berlin |
| R. H. Schulz | FU Berlin |
| M. Teuchert | WIAS Berlin |
| G. M. Ziegler | TU Berlin |