

Dear IMPRS student,

it is our pleasure to welcome you in Bonn and to congratulate you once again that you have been accepted to the *International Max Planck Research School for Astronomy and Astrophysics*. This **Blue Book** is meant to serve as a guide to the IMPRS workings and the most important procedures related to your PhD course from day one till after your successful defence. Moreover, it includes some useful information that will assist you in your everyday life. It is, therefore, essential that you go through it and refer to it whenever needed.

We are obliged to underline that the IMPRS **Blue Book**, in its first version, is the result of the dedicated and thorough work of Frau **G. Breuer** who was the IMPRS secretary for a number of years. The current version would not have been an easy task without her effort. We, therefore, owe her our sincere gratitude!

We wish you good luck and a very successful stay in Bonn. Please bear in mind that we are here to assist you so do not hesitate to contact us any time.

Yours,

Dr. Emmanouil Angelakis  
**IMPRS coordinator**

Dr. Simone Pott  
**IMPRS assistant**



## IMPRS – Emergency Contact

Please provide the “IMPRS Büro” with contact information for two persons that may be contacted in a case of an emergency. **The content of this document remains totally confidential.**

### Contact 1

**Name:**

**Relation to student:**

**Postal Address:**

**Telephone:**

**Email:**

### Contact 2

**Name:**

**Relation to student:**

**Postal Address:**

**Telephone:**

**Email:**

## Additional Report

Please provide the IMPRS office with any issue (health problems etc.) you may want to in the space below.



## IMPRS Matters

### Thesis Committee

For each student member of the IMPRS, a thesis committee is formed with the task to monitor the student's progress. It should consist of

- 1st and 2nd referee of the thesis  
(who will be members of the PhD Examination Board ("Promotionskommission". At least one of them has to be a member of the Faculty of Mathematics and Natural Sciences)
- Thesis advisor (if not already one of the above)
- One member of the partner institution (MPIfR / University of Bonn / University of Cologne)  
– if the thesis advisor is **not** one of the two referees  
or  
two members of the partner institutions – if the thesis advisor is one of the two referees

Students are responsible to organize regular thesis committee meetings to discuss the state of his/her work, its continuation and timing. Students may also arrange a meeting of his/her thesis committee if he/she encounters problems that need to be solved.

Each meeting is documented in a report (see attachment 1) that should be handed over to the IMPRS office.

## Seminar

A weekly seminar *from students to students* gives an overview of all research projects carried out by the members of the school and provides opportunities for discussion between students and researchers. The seminar takes place on **Mondays from 13:00 until 14:15**. Furthermore, the IMPRS Monday Seminar is where conferences, schools observing trips etc. are discussed and reported.

Every student should give at least **one seminar talk per year**. The recipe is that a student is giving a seminar talk once he or she has completed **6, 18 and 30 months of work**. In this talk the research project, its progress and aims should be presented. The length of the talk should be around 20 – 30 minutes.

For the speaker, the seminar provides the chance to practice free speech in English, presentation techniques, timing of a talk, preparation for conference talks etc. and get feedback for improvements.

Besides the students the supervisors, members of the thesis committees and other students from both the MPIfR and the University institutes are invited to the seminars.

The seminar is meant as a forum for the exchange of scientific ideas and as a “training ground” for the student.

The program for the IMPRS seminar can be found at:

[http://www.mpifr-bonn.mpg.de/old-mpifr/imprs/program/Seminar\\_2010.htm](http://www.mpifr-bonn.mpg.de/old-mpifr/imprs/program/Seminar_2010.htm)

## Black board Lectures

In January 2010 the school has initiated yet another training activity namely the **black board lectures**. Those are tailored to the needs of the students and they are meant to be flexible, informative about the modern astrophysical topics and methods as well as introduce the students to fields that an astrophysicist owes to know. The organization of the lectures is **one course per quarter** and each course is **no shorter than 4 and no longer than 8 weeks**. The courses alternate between technical (times series analysis etc.) and astrophysical (high energy astrophysics etc.) The exact plan of each course is subject to agreement between the tutor and the students.

## Max Planck Lectures

Once per semester a special guest is invited to give a lecture on her/his research field. A reception after the lecture provides the opportunity to talk to the speaker. The students are encouraged to suggest speakers and/or topics of interest.

## Annual Report

IMPRS students are asked to deliver an Annual Report to the IMPRS Secretariat by 31 January of the following year. The report should list

- Summer/winter schools attended (name, place, dates)
- Conferences/workshops attended (name, place, dates). Please also give titles of talks/posters presented.
- Publications (published, in press, submitted)
- Dates of Thesis Committee meetings.

This information will facilitate the compilation of various reports, questionnaires and statistics (for IMPRS, MPG, AG, MPI's Scientific Advisory Board).

## **Duration and Extension of IMPRS and MPIfR Grants**

The initial contract lasts for 2 years and upon application for extension is extended for another year. Students financed by the IMPRS applying for an extension of the contract should attach a short summary of the present state of their PhD project as well as a time estimate for the work that is needed to finish.

Please submit the application to the IMPRS Office.

## **Break from Scientific Work**

IMPRS and MPIfR scholarship holders staying in Germany for at least one year may take a break from scientific work (31 days per year if under 30 years of age; 34 days if 30 years and older) while still receiving grant payments. Please inform your supervisor of your absence.

## **IMPRS Notebook**

A notebook will be provided (depending on the IMPRS budget) to students that are financed by the IMPRS budget for exclusive use during their IMPRS membership. On termination of the IMPRS membership the notebook has to be returned to the IMPRS Office.

## **Student Speakers**

The Student Speakers are the representative of all IMPRS students. There is one representative from each affiliated institute, i.e. one from the MPI, one from the Alfa and one from the University of Cologne. They also participate in the annual MPG PhD Network meeting.

## **Attachments**

- 1 Thesis Committee Meeting Report





## **Meeting of the IMPRS Thesis Committee**

**IMPRS Student:**

**Date of meeting:**

**Participants:**

**Status / Progress / Quality of PhD Project:**

**Advice for further Research / Studies / Courses:**

**Next Meeting:**

**Signatures**



## Paperwork After Arrival in Bonn

### Health insurance

Information will be provided separately.

### Address Registration

Everyone who stays in Germany for longer than 3 months must register at the Resident Registration Office (“Einwohnermeldeamt” in German). This should be done within 7 days after arrival. You have to inform the Resident Registration Office each time you change your address and when you leave Germany. For stipend holders at the MPI this will be taken care of by the internal Welcome Office. The MPIfR driver will take the documents to the respective office and collect them again (registration takes one day only, extension of the residence permit usually about 3 days).

You will receive a stamped copy of your registration (“Anmeldebestätigung”). This piece of paper is important and must be well kept. It is needed for several official appointments such as opening a bank account. For non-EU residents it is essential to extend their residence permits.

Documents needed: passport  
filled-in form

“Anmeldung” for 1<sup>st</sup> registration  
“Ummeldung” for change of address  
“Abmeldung” when leaving Germany

### Residence Permit

- Non-EU Nationals:

All non-Europeans should have entered the country with an official student/working visa. This is valid for three months and must be converted after arrival into a residence permit. The respective immigration office (“Ausländerbehörde” in German) is responsible for the conversion. Again, for stipend holders at the MPI this will be taken care of by the internal Welcome Office.

Documents needed: passport  
filled-in form “Antrag auf Erteilung einer Aufenthaltserlaubnis”  
1 passport photograph  
Anmeldebestätigung (registration copy)  
Confirmation by the MPIfR administration  
(for those working at the University: copy of the contract + health insurance)

## Open a Bank Account

To open a bank account you can choose any bank you like.

Most stipend holders and MPI employees have an account with the local Sparkasse Köln Bonn (branch Magdalenenplatz). There is no account charge for students up to the age of 29.

Documents needed:      passport  
                                 Anmeldebestätigung  
                                 Confirmation by the MPIfR  
                                 (Non-MPI: proof of income (copy of contract and/or pay roll))

## Housing

Unfortunately IMPRS students cannot get hold of University dormitory rooms. These are preferentially given to students who have not yet graduated and who have to live on less than 669 €/month, and are under 30 years of age.

The number of furnished apartments on offer is considerably less than that of unfurnished ones, and they are also more expensive. Unfurnished rooms/flats here are just that: completely unfurnished (i.e. they don't even have lighting fixtures!). Sometimes unfurnished *apartments* have built-in kitchen facilities (sink, refrigerator, cooking stove).

The rent for a furnished apartment or a flat for a single person is approx. 400 € per month.

All-inclusive rents are not the rule. Normally the rent consists of two parts: the basic rent + a monthly prepayment for incidental expenditures (= Nebenkosten).

Nebenkosten are:

- Heating (costs will depend on the type of heating (oil, gas, electricity), weather conditions and consumption)
- Water  
Water is quite expensive in Germany. The price varies from town to town and generally increases almost every year. For every m<sup>3</sup> fresh water you also have to pay for its disposal. In Bonn you may expect 4,00 € for 1 m<sup>3</sup> fresh water and waste water disposal. Hot water is either provided via the central heating (increasing the heating costs) or by a boiler (increasing the costs for electricity).
- Waste disposal (by the city of Bonn)
- Street cleaning (by the city of Bonn)
- General electricity (corridors, common rooms like laundry)
- Share of the landlord's property tax
- Share of the landlord's property and liability insurances
- Stairwell cleaning if provided

A detailed accounting of all the Nebenkosten has to be made once a year. After deduction of the monthly prepayment, this either results in a refund or an additional payment. The latter is more likely, especially if the amount of prepayment was calculated some time ago with a narrow margin and was not regularly adapted to reality. Most of the above items tend to increase every year or two.

Rent always has to be paid in advance. It is advisable to arrange for a standing order with your bank (= Dauerauftrag). Then the bank will automatically transfer the rent every month.

Along with the first payment of the monthly rent usually a deposit ("Kautions") amounting to 2x (sometimes 3x) the basic rent has to be paid. This is to cover any damage the tenant may cause to property. The deposit will be repaid after deduction of any amount needed for repair or renovation on termination of the lease. The deposit may be paid in 2 (resp. 3) instalments.

Electricity: only sometimes is part of the Nebenkosten. Usually each tenant makes his own contract with the provider (in Bonn: Stadtwerke Bonn). A certain amount (depending on the number of persons, size of

the flat, consumption of the former tenant) will be fixed which has to be paid every month. Once a year a final settlement is made.

### **How to find a place to live?**

You may start with the MPIfR Guest Assistant to check what offers are presently available (there are quite a number of landlords who notify us when they have vacancies). Other possibilities are looking into the local newspaper "GeneralAnzeiger" on Wednesdays and Saturdays (with the bigger part of offers) or search at <http://www.immobilienscout24.de/> However, you will soon note that most of the offers are by real estate agents (the names generally include the word "Immobilien"). Which one should avoid (although it probably is the quickest way to find something) because of the high costs they charge for their service. They usually ask between two and three months' rent. This fee adds to the deposit (see above) and the first month's rent you'll have to pay to the landlord before moving into the place.

Other internet sites (free of real estate agents):

<http://www.studenten-wg.de/>

(→ Wohnungsmarkt → first choose between „WG-Angebote (= living community) or „Wohnungsangebote“ (leading to one-room offers), then choose „Bonn“)

<http://www.wg-gesucht.de/>

(left side "Angebote lesen" choose Bonn. This leads to WG offers; under 1. "Rubrik wählen" you can change to what you are looking for (1-Zimmer-/ Mehrzimmer-Wohnung)



## Registration at the University of Bonn

The University of Bonn awards the PhD (Dr. rer.nat.) according to its standard rules, after acceptance of the Ph.D. thesis and a successful defence. The MPIfR is a research institution can do their thesis research, but the University defines and controls all official academic requirements.

There are no tuition fees – neither for the IMPRS nor for the University of Bonn. The only fee is a registration fee (so-called “Sozialbeitrag”, social contribution) to the University of Bonn which is slightly more than 200,00 Euros per semester.

### Registration

Although registration for two terms only is necessary for PhD thesis work at the University of Bonn, we recommend registration for the complete period – to take advantage of the benefits the Student ID offers (public transport free of charge, reductions on tickets for theatres, museums etc.).

For the registration of foreign IMPRS students there exists an agreement with the Clearing Office on a simplified procedure. Admission to studies at the University of Bonn will be granted based on details provided by the IMPRS Office ahead of the official registration period. If you want to you can be enrolled as a doctoral student for as long as it takes you to finish. In case the PhD confirmation (“Promotionsbestätigung”) has not yet been obtained, registration is made for one term (“Orientierungssemester”) first and will be extended as soon as the PhD confirmation is presented.

For the registration the following documents are needed:

- Registration form „Antrag auf Einschreibung“  
[http://www3.uni-bonn.de/studium/beratung/studentensekretariat/imma\\_antrag.pdf](http://www3.uni-bonn.de/studium/beratung/studentensekretariat/imma_antrag.pdf)
- Originals of certificates
- Proof of health insurance. If you are privately health insured, you need to go to a public health insurance company with a certificate from your private one and obtain a form, which is called “Befreiungsbescheinigung von der gesetzlichen Krankenversicherung”. You need to bring this form for the enrolment.
- PhD confirmation (“Promotionsbestätigung”) – if already available
- Passport

You will get a transfer form for payment of the registration fee (so-called social contribution, “Sozialbeitrag”). You should make the transfer as quickly as possible. This fee is mandatory and has to be paid each semester, i.e. twice a year.

Upon registration, you will receive a preliminary certificate proving that you are regularly enrolled at the University of Bonn. You can use this as a ticket for public transport from the first day of the semester (1<sup>st</sup> October or 1<sup>st</sup> April, respectively) until you receive the Student ID. The number (so-called “Matrikelnummer”) you will be given upon registration is valid throughout your studies at the University of Bonn. It should always be quoted in official letters to the University.

## Student ID

Two to four weeks after registration and after payment of the social contribution has been received, the registration certificates and the student ID card will be sent to your home address.

## Re-Registration

Once enrolled at the University of Bonn, you will have to re-register (“Rückmeldung”) for each of the following semesters. There is a registration deadline by which you need to transfer the registration fee (“Sozialbeitrag”) – 31 August for the winter term and 28 February for the summer term. You will then receive your semester documents automatically. Please take into account that the transfer could take up to 10 days! If the deadline is missed a fine of 25 € has to be paid.

## Change of Address

The Studentensekretariat has to be informed of every change of your personal data (i.e. change of name, address, nationality) immediately, quoting your registration number (Matrikelnummer).

Address: Studentensekretariat der Universität Bonn  
Poppelsdorfer Allee 49  
53115 Bonn  
Fax: 0228-73-7421 or 0228-73-1740

## Admission to PhD studies

To be admitted to start a Ph.D. in astronomy at the University of Bonn a German Diploma in Physics or a qualification equivalent to it, i.e. a Master of Science degree (including a Master's thesis) is required.

The application for admission to doctoral studies (“Antrag auf Zulassung zum Promotionsstudium” – attachment 1) is submitted to the Ph.D. board of the Faculty of Mathematics and Natural Sciences – via the Section Physics/Astronomy, which will decide individually whether you fulfil the formal requirements to start doctoral research. You need to have two advisors, who evaluate your thesis. One of them is usually the head of your research group. Please note that the second referee can be a professor appointed for lifetime from another university if the first referee is a professor for lifetime at the University of Bonn. This does not apply to professors of honour.

In addition to the application form the following documents are required:

- a letter to the Dean of the Faculty applying for academic recognition of your previous achievements as well as to obtain the permission to write your Ph.D. thesis in English and take the exam in English (see example, attachment 2).
- Curriculum Vitae
- Original and copy of your certificates
- Certified copies of academic records
- Copy of the Master's Thesis (if written in English; otherwise an abstract in English)
- Copy of your residence permit
- TOEFL (or equivalent)

These documents are presented to the Secretariat of the Physics/Astronomy Section of the Faculty (Mrs. Cornelia Zapf, Endenicher Allee 11-13, room 1.07; Monday – Friday 10:00 – 12:00). After the Section's Head has checked your documents and signed approval, the application is forwarded to the Dean's office.

If approval is given you will receive a certificate that the degree you obtained at your home University is considered equivalent to that of the University of Bonn. It also states that there are no objections to



registration for doctoral studies in Astronomy and that you intend to write your thesis and take the exam in English, so that German language knowledge and certificate is not necessary. In addition, you will receive a “Promotionsbestätigung”, a confirmation that you meet all admission requirements for carrying out a dissertation at the University of Bonn. The Dean of the Faculty of Mathematics and Natural Sciences signs both papers.

**Attachments:**

- 1 Application for admission to doctoral studies (“Antrag auf Zulassung zum Promotionsstudium”)
- 2 Example letter to the Faculty’s Dean



**An den Promotionsausschuss der  
Mathematisch-Naturwissenschaftlichen Fakultät**

der Rheinischen Friedrich-Wilhelms-Universität Bonn

**Antrag auf Zulassung zum Promotionsstudium**

Hiermit beantrage ich die Zulassung zum Promotionsstudium

Name: .....

Vorname: .....

Geburtsdatum: .....

Geburtsort: .....

Privatadresse: .....

Institutsadresse: .....

Telefon: .....e-mail-Adresse: .....

Promotionsfach: .....

Teilfach: .....

Titel des Dissertationsprojektes: .....

.....

.....

Name, Institution und Status (nach § 4, Abs. 3 der Promotionsordnung) der Betreuerin oder des Betreuers

.....

ggf. Name und Instituts-Adresse der Zweitbetreuerin/des Zweitbetreuers:

.....

- Hiermit beantrage ich, ohne eine zweisemestrige Immatrikulation bzw. ohne ein Beschäftigungsverhältnis an der Universität Bonn zum Promotionsverfahren nach § 6 Abs. 1 zugelassen zu werden (ggf. ankreuzen).

.....

.....

Datum

Unterschrift der Antragstellerin oder des Antragstellers

Befürwortet  
Bonn, den

Genehmigt  
Bonn, den

.....

.....

(Fachgruppenvorsitzender)

(Dekan)

Anlagen: 1. Stellungnahme der Betreuerin oder des Betreuers zu den Zulassungsvoraussetzungen  
2. Erklärung zur Betreuungsvereinbarung  
3. Nachweis über ein abgeschlossenes Universitäts- oder Hochschulstudium  
(§ 5 Promotionsordnung)





Anlage 1 zum Antrag auf Zulassung zum Promotionsstudium

**Erklärung der Betreuerin oder des Betreuers zu den Zulassungsvoraussetzungen**

Im Falle des Antrages von

Name: .....

Vorname: .....

Geburtsdatum: .....

Geburtsort: .....

Privatadresse: .....

Institutsadresse: .....

Telefon: ..... e-mail-Adresse: .....

trifft hinsichtlich der Zulassungsvoraussetzungen nach § 5 Promotionsordnung der Math.-Nat. Fakultät vom 7. Januar 2004 Folgendes zu (bitte ankreuzen):

- Die umseitig angeführten Zulassungsvoraussetzungen wurden an einer deutschen Hochschule erbracht.
- Ein formloser Antrag der Doktorandin oder des Doktoranden auf Anerkennung der Gleichwertigkeit von an ausländischen wissenschaftlichen Hochschulen erworbenen Leistungsnachweisen liegt bei.

Seite 2 der „Erklärung der Betreuerin oder des Betreuers zu den Zulassungsvoraussetzungen“  
im Falle des Antrages von

Name.....Vorname:.....

Ein abgeschlossenes Studium (§ 5 Abs. 1) liegt vor entsprechend § 5 Abs. 2 (Zutreffendes bitte ankreuzen):

1. ein Diplomstudiengang an einer wissenschaftlichen Hochschule mit einer Regelstudienzeit von mindestens acht Semestern und einer wissenschaftlichen Abschlussarbeit,
2. ein Ergänzungsstudiengang an einer wissenschaftlichen Hochschule (im Sinne von § 88 Abs. 2 HG),
3. ein Masterstudium an einer Hochschule mit einer Regelstudienzeit von zwei bzw. vier Semestern, welchem ein fachlich entsprechender Bachelorstudiengang von acht bzw. sechs Semestern vorausgegangen war, also insgesamt ein Studium von zehn Semestern im Promotionsfach (konsekutiver Master),
4. ein Masterstudiengang an einer Hochschule mit einer Regelstudienzeit von mindestens vier Semestern, falls kein fachlich entsprechender Bachelorstudiengang von mindestens sechs Semestern vorausgegangen war (weiterbildender Master),
5. ein Diplomstudiengang an einer Hochschule mit einer Regelstudienzeit von mindestens sechs Semestern und einem qualifizierten Abschluss sowie daran anschließende und angemessene auf die Promotion vorbereitende Studien im Promotionsfach,
6. ein Bachelorstudiengang an einer wissenschaftlichen Hochschule mit einer Regelstudienzeit von mindestens sechs Semestern und einem qualifizierten Abschluss,
7. ein abgeschlossenes Medizin-, Zahnmedizin- oder Pharmaziestudium,
8. ein mit der Ersten Staatlichen Prüfung abgeschlossenes Studium der Lebensmittelchemie,
9. ein mit der Ersten Staatsprüfung abgeschlossenes Studium für das Lehramt der Sekundarstufe II oder für das Gymnasium.

Im Falle von Abs. 2, Sätze 4-6:

Vor Zulassung zum Promotionsstudium sollten noch folgende Studienleistungen erbracht und nachgewiesen werden (§ 5 Abs. 3 und 4):

.....  
.....  
.....  
.....

(ggf. zusätzliches Blatt benutzen)

.....

Ort, Datum

Unterschrift der Betreuerin oder des Betreuers

Institutsstempel

Anlage 2 zum Antrag auf Zulassung zum Promotionsstudium

**Erklärung zur Betreuungsvereinbarung**

über den  
Geschäftsführenden Direktor vorzulegen

Für das Promotionsvorhaben vereinbaren nachfolgende Personen eine Betreuung:

.....  
Unterschrift  
Doktorandin oder Doktorand

.....  
Unterschrift  
Betreuerin oder Betreuer

.....  
Unterschrift  
Zweitbetreuerin oder Zweitbetreuer\*)

Bonn, den .....

\*) § 4 Abs. 4

Falls die Betreuungsperson nicht zur Math.-Nat. Fakultät gehörig ist, muß eine Zweitbetreuerin oder ein Zweitbetreuer aus der Math.-Nat. Fakultät angegeben werden. Dies soll auch geschehen, wenn die Betreuungsperson zur Math.-Nat. Fakultät gehört, aber hauptberuflich außerhalb der Math.-Nat. Fakultät tätig ist.

Gesehen: .....  
Unterschrift des  
Geschäftsführenden Direktors

Datum: .....

Stempel: .....

Unter bestimmten Bedingungen (§ 4 Abs. 6) kann ein zunächst vorläufiges Betreuungsverhältnis geschlossen werden; hierzu gibt es Formulare beim Promotionsbüro.





An den  
Vorsitzenden des Promotionsausschusses  
der Mathematisch-Naturwissenschaftlichen Fakultät  
der Rheinischen Friedrich-Wilhelms-Universität Bonn

**Verpflichtungserklärung zu § 4 Abs. 8 der Promotionsordnung**

Ich bestätige hiermit, von der Vorschrift des § 4 Abs. 8 der Promotionsordnung Kenntnis genommen zu haben, wonach in Abständen von zwei Jahren dem Promotionsausschuss das Betreuungsverhältnis bestätigt werden soll und ein inhaltlicher Bericht (Zwischenbericht) der Doktorandin oder des Doktoranden über den Fortgang der Arbeit samt einer Stellungnahme der Betreuerin oder des Betreuers vorgelegt werden soll.

Bonn, den .....

.....  
Unterschrift der Doktorandin  
oder des Doktoranden



*First Name Last Name*

*Address .....*

An den

Dekan der Mathematisch-Naturwissenschaftlichen Fakultät

Herrn Prof. Dr. U.-G. Meißner

Wegelerstraße 10

D-53115 Bonn

*.... Date .....*

Dear Professor Meißner,

After having completed my studies at the ..... *Name of University* ....., I came to Bonn to attend a Ph.D. study in Astronomy. My project started in ... *month year* ... at the *Max-Planck-Institut für Radioastronomie / XYZ Institute of the University of Bonn*, under the supervision of Prof. .... My project deals with "... *title of work* ....."

I request to acknowledge that my ..... *name of degree* ..... meets the requirements by the University of Bonn for admission to a PhD course, in order to complete my Ph.D. project at the University of Bonn.

I furthermore request the permission to write and discuss my Ph.D. thesis in English, as well as to take my examinations in English.

I attach a copy of my CV and of my academic records.

Sincerely yours



## Registration at the University of Cologne

The University of Cologne awards the PhD (Dr. rer.nat) according to its standard rules, after acceptance of the Ph.D. thesis and a successful defence. The MPIfR is a research institution at which students can do their thesis research, but the University defines and controls all academic requirements.

There are no tuition fees for PhD students – neither for the IMPRS nor for the University of Cologne. The only fee is a semester fee (so-called “Sozialbeitrag”, social contribution) at the University of Cologne which amounts to roughly 202,87 € per semester.

### Documents required for admission:

1. Filled application form for admission to studies (4-page interactive PDF file)  
Download from: [http://www.mpifr.de/old\\_mpifr/imprs/download/index.htm](http://www.mpifr.de/old_mpifr/imprs/download/index.htm)  
(attachments 1 and 2)
2. Confirmation of IMPRS/MPG scholarship  
(will be provided by MPI administration)
3. Letter to the Akademisches Auslandsamt requesting recognition of your previous academic achievements as well as asking permission to write your Ph.D. thesis in English and take the exam in English (attachment 3).
4. Curriculum Vitae (up to date), signed
5. Copy of passport (incl. residence permit)
6. Passport photo
7. Certified copies of all original certificates and certified translations (only English and German will be accepted)
  - high school certificate
  - University graduation certificate (BSc, MSc, Diplom etc.)
  - University transcript(s)
  - Language certificate or score reports (e.g. TOEFL, IELTS etc.)
8. Form „Mitteilung der Promotionsabsicht“ (notification of intended PhD – attachment 4) signed by the supervisor (professor of Cologne University, i.e. A. Eckart) (2-fold; one copy will be returned to you – see below)  
This at the same time represents a supervising contract.  
(will be prepared by IMPRS Secretariat)
9. Copy of Master Thesis, if written in English. Otherwise a summary of the thesis in English.

The address for submission is:

Akademisches Auslandsamt  
Universität zu Köln  
Kerpener Str. 4

50923 Köln

Mrs. Lisa Brüning

Phone: 0221 – 470-1661

Office hours: 10:00 – 12:30 Monday, Tuesday, Thursday & Friday  
(i.e. closed on Wednesdays)

Take a train from Bonn Hbf. to Köln Süd. From there follow Zülpicher Strasse on the right side. About 100 m past the MENSA (building 118) and shortly before reaching Universitätsstraße, you will find the office in building 115 (see attachment 5).

As soon as the PhD examination board of the Faculty of Mathematics and Natural Sciences has given their approval, you will receive admission to study Physics (“Zulassung zum Studium”) at the University of Cologne. This will be initially limited to 2 semesters (so-called preparation for a PhD – “Promotionsvorbereitung”). At the same time you will also receive the registration form and details.

The International Office forwards your request for recognition of your foreign degree(s) to the PhD examination board of the Faculty of Mathematics and Natural Sciences. Due to the high number of doctoral candidates, this process may take between several months and one year to complete (hence the initial enrolment for 2 preparation semesters).

You will finally receive a letter of admission to the PhD examination procedure at the Faculty of Mathematics and Natural Sciences. Along with this letter a stamped and signed copy of the form „Mitteilung der Promotionsabsicht“ is returned. Please keep this safe! You will need it again when you submit your thesis.

Please note that the second referee can be a professor appointed for lifetime from another university if the first referee is a professor for lifetime at the University of. This does not apply to professors of honour.

## Registration

Although registration for two terms only is necessary for PhD studies at the University of Cologne, we recommend registration for the complete period – to take advantage of the benefits the Student ID offers (public transport free of charge, reductions on tickets for theatres, museums etc.).

The above-mentioned admission notification will mention the date by which you have to mail (Akademisches Auslandsamt der Universität zu Köln, Albertus-Magnus-Platz, 50923 Köln) or submit personally (address and opening hours as in previous chapter) the following documents:

- The admission notification (the original “Zulassungsbescheid”; the copy is for your files)
- Completed registration form („Antrag auf Einschreibung“)
- Certificate by your medical insurance company

Upon receipt of these documents the International Office will send you a preliminary Semester Ticket and a pre-filled money transfer form for the payment of the semester fee (also called “Sozialbeitrag” – social contribution) which currently amounts to 202,87 € for each semester. This fee is mandatory and has to be paid twice a year. The Semester Ticket and the money transfer form will also state your Matrikel-Nummer.

## Student ID

Approximately 4 weeks after you have paid the social contribution, your matriculation documents and the final student ID card will be sent to you along with the transfer form for the next semester’s fee (see “Re-Registration” below).

Together with a photo ID the student ID can be used as a ticket for busses, trams and local trains within NRW free of charge. The costs of this so-called “Semester-Ticket” (132,20 €) are included in the social contribution. This ticket is valid for 6 months (starting 1<sup>st</sup> October or 1<sup>st</sup> April, respectively), i.e. not only during lecture periods. With the student ID card you also get a students’ reduction of up to 50% on tickets for theatres, opera houses, museums, etc.

## **Re-Registration**

Once enrolled at the University of Cologne, you will have to re-register (“Rückmeldung”) for each of the following semesters. There is a registration deadline by which you need to transfer the registration fee (“Sozialbeitrag”) — **15 July for the winter term** and **15 February for the summer term**. You will then receive your semester documents automatically. Please take into account that the transfer could take up to 10 days! If the deadline is missed a fine of 4,60 € has to be paid.

## **Change of Address**

Please inform the academic exchange office (“Akademisches Auslandsamt”) about all changes of your personal data (i.e. change of name, address, nationality) immediately, quoting your registration number (Matrikelnummer).

Address: Akademisches Auslandsamt der Universität Köln  
Kerpener Str. 4  
50923 Köln  
Fax: 0221 – 470-5016

## **Attachments:**

- 1 Example letter to the Akademisches Auslandsamt requesting recognition of previous academic achievements





... Name ...

Auf dem Hügel 69, 53121 Bonn  
c/o MPI für Radioastronomie

Universität zu Köln  
Akademisches Auslandsamt  
Kerpener Str. 4  
D-50923 Köln

Bonn, ... Date ...

Dear Madam/Sir,

Since .. date ..... I am a member of the *International Max Planck Research School (IMPRS) for Astronomy and Astrophysics at the Universities of Bonn and Cologne*. My PhD project deals with "Title ....." and will be supervised by Prof. A. Eckart (I. Physikalisches Institut der Universität zu Köln) and Prof. J.A. Zensus (Max-Planck-Institut für Radioastronomie Bonn).

I request to acknowledge that my "... name of degree ...", obtained from the ... name of University ....., ... city/country in .... Month/year ....., meets the requirements by the University of Cologne for admission to a PhD course, in order to complete my Ph.D. project at the University of Cologne.

I furthermore request the permission to write and discuss my Ph.D. thesis in English, as well as to take my examinations in English.

I attach a copy of my CV and of my academic records.

Sincerely yours,

... name / signature .....



## Instructions and guidelines in accordance with the PhD Regulations (Promotionsordnung)<sup>1</sup> for PhD students at the University of Bonn

Generally, all four members of the commission need to be qualified as professors (“habilitiert”). This being the case the 3<sup>rd</sup> member of the commission could be external, i.e. not from the University of Bonn but should still be qualified as a professor in Germany. Exceptional cases such as members of the commission are professors from outside Germany are subject to the dean’s approval so general information cannot be given on such cases. Moreover, the dean’s office evaluates each case individually and specific questions should be addressed to [promotio@uni-bonn.de](mailto:promotio@uni-bonn.de). Each PhD candidate has to write to this email address to get a form that he/she needs to fill out before submitting the thesis.

The most general information on the examination board can be split up as follows:

### PhD Examination Board (“Promotionskommission”):

Consists of 4 members:

1. Referee (the supervisor)
2. Referee (second examiner) (who in general is the chairperson of the examination board)
3. Someone of the same or similar field (i.e. a physicist)  
(in general suggested by the PhD candidate and who must be qualified as a professor (“habilitiert”))
4. Someone external to the subject (for example informatics (Prof. Ch. Strelen), geodesy (PD Dr. A. Nothnagel), meteorology (Prof. C. Simmer))

### Period of Display (“Auslegefrist”):

Upon submission of the thesis and all relevant documents (see next page) a complicated procedure follows to collect the reports in the dean’s office and to derive the grade. Then follows a 2 weeks’ term of display plus another week to announce the colloquium

See § 9 (1)

The grade “**excellent**” (ausgezeichnet)

- requires a third, external report
  - the supervisor suggests three referees of which the dean then chooses one
- This will prolong the processing time considerably. Choosing the external referee and waiting for her/his report may well take another 2 months!

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<sup>1</sup> as of 7 January 2004

– see <http://www.math-nat-fakultaet.uni-bonn.de/Wob/images/05199947.pdf>

## The procedure in details

### 1. Submit the following to the Promotionsbüro (PhD Office)

Mr. Jorg Wenniges

Wegelerstr. 10

Telephone: 0228-73 2232

Opening hours of the office: 10:00-12:00 Monday – Thursday

- An application to be admitted to the PhD examination procedure. This form can be requested by email at [promotion@uni-bonn.de](mailto:promotion@uni-bonn.de) as mentioned before. The form that is published on pages 44 ff. is just a SAMPLE. The application has to be signed and a photo should be pasted in. You have to add a declaration instead of an oath that you have indicated all means of help. This is called “eidesstattliche Erklärung” in German. We have attached a sample.
  - 5 copies of the thesis – indelibly printed and bound - containing a summary and a curriculum vitae. The layout of the title page and of the 2<sup>nd</sup> page should follow the example on the reverse page of the details of the examination procedure (“Hinweise zum Promotionsverfahren – attachment 2)
  - If applicable, 5 copies each of advance publications of major parts of the thesis.
  - One single copy of the summary of the thesis (including your name and the title of the thesis – see example attachment 3)
  - One single copy of the curriculum vitae
  - Completed undergraduate and postgraduate certificates (diploma or bsc and msc copies and originals)
  - A “Führungszeugnis für Behörden” (clearance certificate/certificate of no criminal record) – see separate page for details how and where to apply for it (will be sent to the Promotionsbüro directly)
  - A legalized copy of a valid passport and presentation of the original
  - Proof of at least 2 terms doctoral studies at the University of Bonn or an existing employment at the University of Bonn (proof of MPI employment is not accepted)
2. One copy of the thesis (the examination copy) is stamped and forwarded to the supervisor (1<sup>st</sup> or 2<sup>nd</sup> referee) who signs and returns it to the Promotionsbüro.
3. The first and second referees receive the thesis for assessment.
4. The first and second referees submit their assessment to the Promotionsbüro. According to the PhD Regulations they have to do this within one month after request by the Promotionsbüro, i.e. not necessarily one month after submitting See § 7(2)
5. Copies of the assessments are sent to the 3<sup>rd</sup> and 4<sup>th</sup> member of the examination board who have 2 weeks to forward their vote to the chairperson of the examination board (usually the 2<sup>nd</sup> referee).
6. The chairperson of the examination board informs the Promotionsbüro of the acceptance of the thesis and the cumulative grade.
7. The Promotionsbüro distributes the announcements.  
And only now the 21 days’ term of display plus 7 days for the announcement of the colloquium (Promotionskolloquium) starts.

Even under ideal conditions (i.e. the referees submit their assessments right away and not take the full time at their disposal), the period of time between submitting and defending the thesis will be at least 2 months! To ensure a smooth and swift process, it is advisable to talk to the 1<sup>st</sup> and 2<sup>nd</sup> referee of your

thesis as early as possible and also let them have a version of the thesis prior to the official one they are going to get from the Promotionsbüro. It may also not be easy to find a date for the exam as it involves 4 persons. Please note that in general no exams will be possible during the semester holidays!

**Conferral of a doctorate** consists of two parts:

1. The PhD Thesis

- The thesis has to be scientifically substantial and has to document the ability of independent research and adequate presentation of the results.
- The thesis can be written in German or English.
- The thesis has to be submitted indelibly printed and bound. It must include a complete list of the literature and other sources used and quotations of help received and facilities employed.

2. Oral Exams, consisting of

- a) A public scientific talk with discussion (Promotionskolloquium)
- b) A non-public oral exam (Disputation) following the talk

Both in front of the “Promotionskommission”, and both can be made in German or English.

In the Promotionskolloquium the doctoral candidate presents the scientific results of his PhD work. The length of the talk should not exceed 30 minutes. Afterwards 15 minutes should be allowed for scientific discussion.

The Disputation will take between 30 minutes (minimum) and 90 minutes (maximum).

A sealed envelope (containing the reports and grades) that you will be given after the defence. needs to be submitted to the Promotionsbüro:

Based on this you will receive a certificate that you passed the PhD exam. The official certificate (“Promotionsurkunde”), however, will only be delivered after submitting the following documents:

- Confirmation by the institute’s (= Astronomical Institutes’) librarian (Mrs. E. Danne, room 3.09 Uni) that one copy of the thesis has been handed over (attachment 4)
- “Entlastungsbescheinigung” (relief) by the institute (attachment 5)
- Proof that the thesis has been made available to the scientific public.  
Either a confirmation of the supervisor that essential parts of the thesis have been or will be published in a journal or that the thesis will be distributed by a commercial publisher with a minimum circulation of 150 copies (attachment 6).

Or, if the thesis will be published for the first time, approval by the supervisor to one of three forms of publication (see attachment 7).

We encourage you to choose the following form:

submission of an electronic version

to the eLibrary of the Universitäts- und Landesbibliothek Bonn (UBL).

[http://hss.ulb.uni-bonn.de:90/ulb\\_bonn/diss\\_online/allgemeines/index.htm](http://hss.ulb.uni-bonn.de:90/ulb_bonn/diss_online/allgemeines/index.htm)

Contact person: Ms. Elena Dyck  
Email: [diss-online@ulb.uni-bonn.de](mailto:diss-online@ulb.uni-bonn.de), phone: 0228/73-9533

Address: Universitäts- und Landesbibliothek Bonn  
Abteilungsbibliothek für Medizin, Naturwissenschaften und Landbau  
Nußallee 15a

What is required for online publication:

1. Electronic version of the thesis in PDF format

In case the full version of the thesis exceeds 5 MB, the thesis has to be split into smaller parts (if 3-5 MB) in addition (for example splitting into chapters or giving figures separately). Both versions will be offered on the server.

Please note that the second page (resp. the back of the first page) has to include the names of the 1<sup>st</sup> and 2<sup>nd</sup> referee, the date of the exam as well as a note about the online publication (see attached example – attachment 8)

2. Registration via the online form

3. Signed statement (2 copies) (= contract with the UBL). This statement is automatically generated as a PDF file after completion of the online registration.

4. 5 printed and bound copies of the thesis (Pflichtexemplare/depositary copies). The copies have to be identical to the electronic version (second page as above!). A confirmation of receipt will be sent automatically to the Promotionsbüro.

5. Agreement by the supervisor (see above)

6. Approval by the Faculty (will be requested by the UBL automatically after points 1.-3. have been done).

As soon as the Faculty/Promotionsbüro has given its approval, the thesis will be placed on the server. You will be notified of this by email, and an official confirmation of the electronic publication will be sent to the Promotionsbüro. This confirmation, along with the one that 5 copies have been submitted (point 4. above), accomplish the requirements for the delivery of the official PhD certificate. This is normally handed over during a ceremony (“feierliche Promotion”) that takes place at the end of each semester. If you cannot attend this ceremony, you can pick up your certificate personally or have it sent to you.

## Führungszeugnis für Behörden

### (certificate of criminal history)

Application has to be made at the Bürgeramt of your place of residence.

In Bonn there are four:

Bürgeramt Bonn:	Stadthaus, Berliner Platz 2
Bürgeramt Bad Godesberg:	Kurfürstenallee 2-3
Bürgeramt Beuel:	Rathaus Beuel, Friedrich-Breuer-Str. 65
Bürgeramt Hardtberg:	Villemombler Str. 1

Opening hours:	Monday and Thursday:	8:00 – 18:00
	Tuesday, Wednesday and Friday:	8:00 – 13:00

An application by mail would require that your signature has to be legalized. Therefore better apply for the Führungszeugnis in person. In principle it is possible to just go there and ask for it, but if you don't speak (enough) German it is recommended to take a filled-in but unsigned application form ("Antrag auf Ausstellung eines Führungszeugnisses") with you. You should sign it in the presence of the clerk.

You will need your passport.

And, of course, there's a fee to be paid. According to the web pages of the city of Bonn the fee is 13 € (but could have been increased in the meantime). In other cities the fee could be lower or higher.

As the document is to be presented to an authority, it will not be sent to you but directly to the Promotionsbüro.

This will take about 3 weeks. The certificate is valid for 3 months.



## Instructions and guidelines in accordance with the PhD Regulations (Promotionsordnung) for PhD Students at the University of Cologne

### Guidelines for submission of a PhD thesis at the University of Cologne

#### 1) Thesis “design”

In general, your thesis can look the way you like it. There are, however, few things that should be followed.

- a) Title page: see the sample page attached. The text should be as shown, but the font and the arrangement on the page is not prescribed. The university logo is optional.  
You must state your date and place of birth.
- b) First page of your thesis must be identical to the title page, and directly follow it, i.e. do not insert an empty page or something like that.
- c) On the backside of the first page should be the names of the two referees for your thesis.
- d) The thesis must contain two abstracts: one in English and one in German.
- e) At the end there must be an “eidesstattliche Erklärung”, that means that you give a statement in place of an oath that you did all the work yourself. Sign below this text and add the list of publications.
- f) The last page of the thesis must contain your CV (Lebenslauf) IN GERMAN! It can be a very simplified CV, containing private data and education.
- g) Format: For the official submission it must be A4. The library examples can be in any format you prefer.

#### 2) Procedure of submission

- Some of the information can be found on the web page of the dean’s office of the science-math faculty: <http://www.uni-koeln.de/math-nat-fak/dekanat/>
- Check the deadlines for submission. There are 7-8 deadlines per year (you’ll find them under Termine & Info, Promotionstermine)
- At least one week before the submission deadline you should go to Dekanat (in the main building of the University of Cologne, Albertus-Magnus-Platz) to pick up the forms that have to be filled and submitted together with the thesis. Make sure to check the opening hours, it’s open only a few times a week! The person in charge of PhD student is Ms. Karin Gotzmann. At the moment the schedule is:  
Monday, Tuesday and Thursday from 13:30-15:30.
- One of the required forms can be found here: <http://www.uni-koeln.de/math-nat-fak/dekanat/formulare/>, the form is called [Mitteilung der Promotionsabsicht](#). However, it is not the only form to be filled.  
Actually the Mitteilung form must be filled and signed while the student is enrolled at Cologne University in the beginning of the thesis. One copy remains in Ms. Karin Gotzmann’s office and the student keeps the other one.
- Another template that can be found in the section “Formulare” is [“Einladung zur universitätsöffentlichen Disputation \(Prom.ordnung von 2006, § 9, Abs. 3\)”](#). This is the official

announcement for your defence – it should be made public about one week before the date and it has to be signed by the chairman of the commission “Vorsitzender”. Then you just hang the form on of the blackboards of the institute.

- What you need for the final submission:
  - a) 4 copies of your thesis in A4 format. 3 out of the 4 copies of your thesis are for the referees – you will probably get them immediately back to give them to the referees personally – officially the dean’s office should deliver them, but it is faster like this and one is sure that everybody got his/her copy. The 4<sup>th</sup> copy is for the dean’s office.
  - b) All the forms that you have filled (look at examples)
  - c) Your diploma certificate and maybe a transcript (they need original and certified copies and they keep the copies),
  - d) Proof that you have been enrolled at the Uni Koeln for at least two semesters (in form of the blue papers that you receive every semester with your student ticket and that write “promotion” at the bottom).
  - e) The Mitteilung der Promotionsabsicht form.
  - f) The same german CV (Lebenslauf) that you put in the thesis but also signed and with a picture.
- The defence in principle takes place two months after the submission and within the two-week-interval given in *Promotionstermine*.
- The committee: three examiners consisting of two referees and a chairperson. One of the two referees can be a “Privatdozent” if the second one is a professor appointed for life time at the faculty. The third examiner has to represent another field, i.e. not experimental physics. Next to the three examiners is a fourth person plus that writes the protocol (so called Beisitzer) – this can be any person from the institute in possession of a PhD title. Please note that one of the referees can be from another university if the 1<sup>st</sup> referee is a professor for lifetime at the University of Cologne and the 2<sup>nd</sup> referee is a professor for lifetime at another university.
- Tip: You have to find a suitable date for the four (usually busy) people. In addition to that you need a room for this occasion. If your defence will take place at the Ph1, try to organize a room immediately because there’s no much space there. The most appropriate place is the so-called Kosma Raum which is often booked for all kinds of institute happenings; there is another seminar room at the Ph1 where the lectures take place. The bookings of Kosma can be checked at our internal pages, so the best thing is to ask one of your colleagues from Uni Koeln to check the available dates. For the seminar room, one can contact one of the Ph1 secretaries. If none of the two is available, there are other rooms at other physics institutes, please contact the secretaries if this is the only option.

### 3) After the defence

Your thesis has to be published by the university library. The best way to do this is by electronic publishing. Follow the instructions at this web page:

[http://www.ub.uni-koeln.de/digital/kups/veroeffentlichen/diss/index\\_ger.html](http://www.ub.uni-koeln.de/digital/kups/veroeffentlichen/diss/index_ger.html)

First you need a user name and password that you can give online; then you will be able to upload you thesis; finally, the system will generate a confirmation that you have to print out. With this confirmation, and another 9 hard copies of the thesis you have to go to the main library of the University (Universitätsstrasse 33), to the office called *Hochschulschriften- und Tauschstelle*, 4<sup>th</sup> floor, Room 402. Make sure you check the opening hours, currently it’s only 10-12.<sup>2</sup>

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<sup>2</sup> Text about the Cologne submission process added in May 2010.

## **Rules for Reproduction of PhD Theses**

The theses should be available in full at the university thesis web server.

The cover of the thesis should have the IMPRS layout (see attachment; contact E. Angelakis for the macros to produce it). The thesis should be delivered as PostScript, PDF, or Word.

The reproduction of academic theses at the MPIfR printers is not allowed for personal use or for delivery to non-institute affiliated persons. The rules of the Max Planck Society do not allow the IMPRS to cover the print of the compulsory copies for the exam committee members.



An den  
rsitzenden des Promotionsausschusses  
der  
ematisch-Naturwissenschaftlichen Fakultät  
heinischen Friedrich-Wilhelms-Universität  
Wegelerstr. 10  
53115 Bonn

Lichtbild

**Antrag auf Zulassung zum Promotionsverfahren**  
gem. § 6 Promotionsordnung vom 07. Januar 2004

Hiermit beantrage ich die Zulassung zum Promotionsverfahren.

Frau / Herr Name: .....

Vorname: .....

Geburtsdatum: .....-ort .....

Adresse .....

e-mail: ..... Tel.: .....

Titel der Dissertation: .....

Promotionsfach: .....

Teilfach: .....

Ich schlage folgende Mitglieder der Promotionskommission vor:

Erstgutachter (Betreuer): .....

Zweitgutachter: .....

Fachnahes Mitglied: .....

Fachangrenzendes Mitglied: .....

An Eides statt versichere ich, dass ich die Dissertation persönlich, selbständig und unter Offenlegung der erhaltenen Hilfen angefertigt habe, dass diese oder eine ähnliche Arbeit noch nicht anderweitig als Dissertation eingereicht wurde, dass sie

☐ weder vollständig noch auszugsweise veröffentlicht worden ist.

☐ an der nachstehend aufgeführten Stelle vollständig/auszugsweise veröffentlicht worden ist:

Ich habe früher noch keinen Promotionsversuch unternommen.

Ich stimme der Zulassung von Zuhörern bei der Disputation zu / nicht zu.

.....  
(Datum)

.....  
(Unterschrift)





## HINWEISE ZUM PROMOTIONSVERFAHREN

### **Bei der Anmeldung bitte vollständig vorlegen (§ 6 Promotionsordnung v. 07. Januar 2004):**

- unterschriebener Antrag auf Zulassung zum Promotionsverfahren mit Lichtbild
- 5 Exemplare der Dissertation mit einer Zusammenfassung und einem Lebenslauf, urkundengerecht gedruckt und gebunden
- 5 Exemplare von eventuellen Vorveröffentlichungen wichtiger Teile der Dissertation
- ein einzelnes Exemplar der Zusammenfassung der Dissertation
- ein einzelnes Exemplar des Lebenslaufes
- Nachweis des abgeschlossenen Hochschulstudiums (Kopie unter Vorlage des Originals) und ggf. der weiteren Studienleistungen nach § 5 und ggf. die Nachweise des verpflichtenden Promotionsstudiums nach § 4 Abs. 1 Satz 2
- ein Führungszeugnis zur Vorlage bei einer deutschen Behörde ([http://www.bundesjustizamt.de/nn\\_257944/DE/Themen/Strafrecht/BZR/BZRIInhalte/WohnortA.html](http://www.bundesjustizamt.de/nn_257944/DE/Themen/Strafrecht/BZR/BZRIInhalte/WohnortA.html))
- Kopie eines gültigen amtlichen Lichtbildausweises zur Person unter Vorlage des Originals
- Nachweis über ein mindestens zweisemestriges Promotionsstudium oder ein bestehendes Beschäftigungsverhältnis an der Universität Bonn oder Antrag gem. § 6 Abs. 1.

### **Veröffentlichungspflicht gem. § 14 Promotionsordnung:**

*Alle Papierexemplare müssen auf alterungsbeständigem, holz- und säurefreiem Papier ausgedruckt und dauerhaft haltbar gebunden sein.*

- Abgabe von 1 Exemplar an die betreffende Institutsbibliothek (obligatorisch)
- Abgabe von 5 Druckexemplaren (obligatorisch) an die:  
Universitäts- und Landesbibliothek Bonn (ULB)

Abteilungsbibliothek MNL,

Hochschulschriftenstelle/Diss-Online

Nußallee 15a, 53115 Bonn

Tel.: ++49-228-73-9533

mail: [diss-online@ulb.uni-bonn.de](mailto:diss-online@ulb.uni-bonn.de)

[http://hss.ulb.uni-bonn.de/diss\\_online](http://hss.ulb.uni-bonn.de/diss_online)

Des weiteren (alternativ):

- Ablieferung von 40 gebundenen oder gehefteten Exemplaren in Buch- oder Fotodruck an die ULB

**oder**

- Nachweis der Veröffentlichung in einer Zeitschrift

**oder**

- den Nachweis einer Verbreitung über den Buchhandel durch einen gewerblichen Verleger mit einer effektiven Mindestauflage von 150 Exemplaren; auf der Rückseite des Titelblattes ist die Veröffentlichung als Dissertation unter Angabe des Dissertationsortes auszuweisen

**oder**

- Ablieferung eines Mikrofiche und 40 weiterer Kopien an die ULB

**oder**

- Ablieferung einer elektronischen Version, deren Datenformat und Datenträger mit der ULB abzustimmen sind.

### **Zeugnis und Urkunde (§ 15 Abs. 4 Promotionsordnung)**

Das Zeugnis wird nach Ausstellung ausgehändigt. Die Urkunde sobald die Veröffentlichungspflicht gem. § 14 Promotionsordnung (s. o.) erfüllt ist und Entlastungsbescheinigungen der ULB und des Instituts der Doktorandin/des Doktoranden dem Promotionsausschuß vorliegen.



## **DISSERTATION - NOTWENDIGE ANGABEN**

### **AUF DEM DECKBLATT:**

Titel der Dissertation

Dissertation

zur

Erlangung des Doktorgrades (Dr. rer. nat.)

der

Mathematisch-Naturwissenschaftlichen Fakultät

der

Rheinischen Friedrich-Wilhelms-Universität Bonn

vorgelegt von

(Vorname, Name)

aus

(Geburtsort)

Bonn (Jahr oder Monat, Jahr)

### **SEITE 2:**

Angefertigt mit Genehmigung der Mathematisch-Naturwissenschaftlichen Fakultät der  
Rheinischen Friedrich-Wilhelms-Universität Bonn

1. Gutachter

2. Gutachter

Tag der Promotion: (wird später eingesetzt)

### **IN DER DISSERTATION:**

Zusammenfassung

Lebenslauf

Angefertigt mit Genehmigung der Mathematisch Naturwissenschaftlichen Fakultät  
der Rheinischen Friedrich-Wilhelms-Universität Bonn

1. Referent: Prof. Dr.
2. Referent: Prof. Dr.

Tag der Promotion:

.....  
(Stempel der Institutsbibliothek)

### **Empfangsbescheinigung**

Eine Ausfertigung der Dissertation von Herrn/Frau .....  
ist heute hier eingegangen.

.....  
(Datum)

.....  
(Unterschrift)



Title

INAUGURAL-DISSERTATION

zur

Erlangung des Doktorgrades  
der Mathematisch-Naturwissenschaftlichen Fakultät  
der Universität zu Köln



vorgelegt von

**Name Surname**

aus city, country

Köln 2008

Berichterstatter:

Prof. Dr. Name1 Surname1

Prof. Dr. Name2 Surname2

Tag der letzten mündlichen Prüfung: date of the defense

# Erklärung

Ich versichere, daß ich die von mir vorgelegte Dissertation selbständig angefertigt, die benutzten Quellen und Hilfsmittel vollständig angegeben und die Stellen der Arbeit – einschließlich Tabellen, Karten und Abbildungen –, die anderen Werken im Wortlaut oder dem Sinn nach entnommen sind, in jedem Einzelfall als Entlehnung kenntlich gemacht habe; daß diese Dissertation noch keiner anderen Fakultät oder Universität zur Prüfung vorgelegen hat; daß sie – abgesehen von unten angegebenen Teilpublikationen – noch nicht veröffentlicht worden ist sowie, daß ich eine solche Veröffentlichung vor Abschluß des Promotionsverfahrens nicht vornehmen werde. Die Bestimmungen dieser Promotionsordnung sind mir bekannt. Die von mir vorgelegte Dissertation ist von Prof. Dr. Name Surname betreut worden.

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## **Teilpublikationen**

Your main publications

## **Weitere Publikationen**

Other publications





## Affiliation & Publications

### Affiliation

In publications the IMPRS membership should be indicated as a footnote to the name (“thanks{...} for most journals). The following text should be used:

\*Member of the International Max Planck Research School (IMPRS) for Astronomy and Astrophysics at the Universities of Bonn and Cologne”

Students who also receive an IMPRS fellowship should indicate this in the “Acknowledgements”:

“XX was supported for this research through a stipend from the International Max Planck Research School (IMPRS) for Astronomy and Astrophysics at the Universities of Bonn and Cologne”

### Publications

*Note: The first paragraph applies only to students receiving an IMPRS or MPG scholarship. The text is copied from the English translation of the contract. Students who receive financial support by other organizations/foundations should check their contracts or contact their administrative officers to find out how this subject is handled.*

According to Max Planck Society’s and institute’s regulations the head of the institute is to be presented with a manuscript detailing the intention to publish an article resulting from cooperative efforts with the institute or from using the institute’s facilities. The head of the institute decides in agreement with the author if and how references are to be made to the institute. Publication can only be prohibited if it infringes on the interests of the employees at the institute who worked on the research project or if it entails publishing research results too early, which would infringe on justifiable interests of the institute or the Max Planck Society. Unless otherwise arranged, the Max Planck Society acquires nonexclusive, transferable, and cost-free exploitation rights to your research results done in conjunction with the institute for its own scientific purposes.

### Authorization procedure:

Get a so-called “pink card” from the librarian (or your director’s secretary), fill in the required details (title of the manuscript, author(s), journal). If the paper is going to be submitted to a journal for which you have to pay page charges it has to be indicated on the pink card. Then hand it along with a copy of the manuscript to an internal referee of your choice. The referee approves the publication by signing the pink card. Afterwards both the pink card and the manuscript are presented to his/her scientific director who signs it for approval. Students who do not have a scientific director at the institute give it to the IMPRS

speaker.<sup>3</sup> Only then the manuscript may be submitted to the journal. At the same time, the pink card + two copies of the manuscript are submitted to the institute's library for display. After the journal has accepted the manuscript for publication, it may also be submitted to "astro-ph".

In order to have the paper included in the institute's publication list (which is also used for the annual reports of the MPG and AG (Astronomical Society of Germany), please inform the librarian when the paper has been published, especially if it appeared in another than the standard journals A&A, AJ, ApJ (which are checked by the librarian).

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<sup>3</sup> Change made in May 2010.  
Version 4 - 4 February 2014

## German Language Courses

While knowledge of German is not necessary in your professional life, it might still be useful in your everyday life. If you decide to learn German you will soon realize that it is not easy to do so. Not because the language is difficult, but because there are too many Germans who want to improve their English by practicing it on you.

The University of Bonn offers a range of German courses for registered international students. The courses (held by the association “ProIntegration e.V.”) commence in the 3<sup>rd</sup> week of the semester.

Please check the pages of the Office for International Affairs (Akademisches Auslandsamt)

[http://www.uni-bonn.de/en/International\\_Relations/International\\_Students/German.html](http://www.uni-bonn.de/en/International_Relations/International_Students/German.html)

to find out on which date registration for a course can be made. Early registration is recommended, as the number of students interested in the courses exceeds the number of places available. This especially holds for courses for beginners.

The university does not do any placement tests. Instead you could do the online placement test offered by the Goethe Institute

<http://www.goethe.de/cgi-bin/einstufungstest/einstufungstest.pl>

(free of charge) and present the signed printout of the test result. Registration without the result of this placement test is not possible! A later change of levels generally is not possible.

As IMPRS students do not have to pay the service fee for international students (amounting to 150 € per semester), they have to pay a course fee.

Courses at reasonable costs are also offered by the local community college Volkshochschule (VHS). Besides intensive courses (09.45–12:00 3x/week, in total 40 times) evening courses of 1.5 hours twice a week are offered. Courses at the VHS only take place if the minimum number of participants (= 10) is reached. The VHS teaching period is divided into two terms: 1<sup>st</sup> semester from about January/February until June/July, 2<sup>nd</sup> semester from August/September until December (exact dates depend on the summer school holidays).

In addition, there are quite a number of language schools as well as organizations in Bonn offering German courses – however at considerably higher costs.

For holders of an IMPRS or MPI fellowship IMPRS will reimburse 75% of the costs for a course “Deutsch für Ausländer” (German for foreigners) plus the costs for teaching material upon presentation of the receipt(s) for courses taken at the VHS.

Please note that support for such courses can only be granted if the courses are taken during the first half of your stay. No reimbursement can be made if a course is repeated.





## Information on Travels (business trips)

### Summer Schools / Conferences

IMPRS students participate in an advanced summer school organized by the IMPRS. They may also participate in summer schools offered at other research institutions in Europe or overseas if the topic is relevant to the individual thesis subject. Visits to collaborating institutions to carry out data analyses or theoretical research for a period of several weeks are also possible.

Before graduating, IMPRS students should participate in at least one international conference and/or in one German research conference or meeting to present their thesis results.

The students from the MPIfR and the partner Universities can apply for funding for any of these travels (see below).

We encourage the students who wish to attend conferences to request financial support from the organizers of the conference. Especially in the case of IAU Symposia/Colloquia IAU grants for young scientists are available. Such requests should be made at an early stage, the deadlines generally are 6 months or more ahead of the conference dates. Even if the possibility of financial assistance is not mentioned in the announcements, it is worth to try. Yet the exemption from the conference fee or the offer of free accommodation will be a relief for the IMPRS budget.

Another possible way of funding your attendance to a school or conference is to apply to the German Research Society (DFG), <http://www.dfg.de>. The present regulations, however, require that you are German and either give a talk or present a poster at the conference. The application to the DFG has to be submitted 3 months in advance of the conference's starting date.

### Procedure

Travels to be paid by IMPRS have to be applied for with the IMPRS form "Travel Request" and need a statement by the supervisor. The applications should be made at least 4 weeks ahead of the travel date, respectively any deadlines there may be for registration or pre-payment. It is advisable to attach the MPI form "Reise- und Dienstreiseantrag" (attachment 2) already at this stage. Please submit these forms to the IMPRS Office.

For travels financed through other than the IMPRS budget (also by third parties), only the MPI form has to be submitted to the director in charge.

For all travels holds:

- They should be arranged economically
- Flight and train tickets have to be booked by the directors' secretaries, the IMPRS assistant or the administrative officer in charge (Mrs. S. Mertens). This is to ensure that
  - a) Such bookings are in line with our travel regulations

- b) Special discounts the MPI gets from travel agents and German Railway can be taken into account

However, before any bookings can be made, the travel application form has to be approved by the director in charge.

- When prepayment is necessary (e.g. conference fee, hotel deposit) you can attach the relevant information to the "Reise- und Dienstreiseantrag". Payment will then be arranged by the MPI.
- They should be settled within 4 weeks after return (MPI form "Reisekostenabrechnung" — attachment 3). Also if a third party pays the trip but pre-payment is done by the MPI (for example in the form of a flight or train ticket) was made. All receipts should be attached.

If you are granted financial support by a conference organizer (for example free accommodation and/or board), this has to be entered on the application form ("Zuschüsse von 3. Seite" / grants by 3. party).

The expenses for room and board are covered by allowances per day ("Tagegeld") and per night ("Übernachtungsgeld"), the amount depending on the country.

The daily allowance is composed of 20% for breakfast (deducted if the room rate includes breakfast), 40% for lunch and 40% for dinner. As this amount is fixed, you do not have to collect receipts for meals.

Room rates up to 60 € (without breakfast) are considered necessary, for rates exceeding 60 € (without breakfast) you have to give reasons to ensure full refund. Hotel invoices have to be issued with your name included to the MPIfR.

The cost for a conference dinner will only be refunded if approved by the director. Therefore, please attach a printout giving the cost for this to the Reise- und Dienstreiseantrag. If a conference dinner is refunded, the per diem allowance for this day is shortened by 40% (+ 20% if the breakfast is included in the room rate).

If you tick the box "Ich bitte um einen Vorschuss" (I ask for advance payment), up to 80% of the expected cost – either based on the lump rates or else on the documents you have handed in (see below) – will be paid in advance, provided the amount exceeds 500 €.

In order to make the calculation of an advance payment as exact as possible, please attach as much details as possible (for example, information that the conference fee also covers the cost of accommodation and/or meals, copy of the hotel reservation (confirmation), etc.). This way you can avoid advance payments that are either too high (thus having to return a larger sum) or too low (thus having to wait for the reimbursement until the travel expense claim has been processed).

If a **visa** is required for such a travel, the costs to acquire it are also part of the travel expenses. Not only the visa processing fee but also the trip to the consulate if personal application or an interview are necessary. For such a trip a separate form Reise- und Dienstreiseantrag should be submitted.

The costs for vaccinations will also be covered if they are stipulated. For all other vaccinations please consult the administration (Mrs. S. Mertens or Mr. B. Büse) first. However, the costs for additional travel health insurance and luggage insurance cannot be claimed.

## **Changes to travel expense rights**

(BRKG) as of September 1, 2005

### **Reisekostenvergütung/Abrechnung §3 (Travel expense reimbursement/billing)**

The policy of a prompt handling of the travel expense paperwork after the business trip remains unchanged. The right to receive travel expense reimbursement expires if the claim has not been submitted within 6 months after the end of the business trip (this also counts for Effelsberg). An allotted advance is to be paid back if the reimbursement claim was not turned in within this 6-month time period. In principle, business trips should not begin before 6 am and/or end after midnight. An earlier start or later conclusions are, however, possible due to official business reasons. A partial payment up to 80% is possible if the anticipated costs of the trip exceed € 500. Special rules apply to business credit cards.

### **Erstattung von Fahrtkosten §4 (Reimbursement of travel costs)**

For train trips under 2 hours, the costs for tickets in second class will be reimbursed; for trips over 2 hours, first class tickets can also be reimbursed. In both cases, this also counts for use of ICE trains. Travel times to and from the train station/airport, as well as trips at the place of employment/location of business trip, are not included. For those that are handicapped, first class train tickets will always be reimbursed. With a good reason, a rental car or taxi may be used. The request for the use of a rental car must be handed in to the travel expense office before the start of the trip and with a justified reason. Good/justified reasons are, for example:

- o Urgent business reasons
- o Urgent personal reasons
- o No other timely transportation method available
- o Trips between 23:00pm and 6:00am

For the use of a rental car or taxi without justified reason, a compensation according to §5 Abs. 1 (€0,20 cents/km) will be granted.

### **Wegstreckenentschädigung §5 (compensation for travel distance)**

For the use of a car or motorcycle, the compensation is 0,20 cents per km; at the most € 130 Euros. This amount can be raised to € 150 in special business-related circumstances. No reason or permission is needed for such trips, but a clear notification prior to the trip is mandatory – especially due to the limited compensation and the non-present property damage/loss liability. When using a car out of “considerable business reasons”, the compensation is € 0,30 cents/km, without a maximum limit. The considerable business reason must be acknowledged before the start of the trip. The measures for this are to be strictly applied since, as the case may be, a full claim for damage/loss of property may exist for the employer. Under certain premises, compensation can also be given for travel with a bicycle.

### **Tagegeld §6 (daily allowance)**

A minimum distance of 2 km for a business trip has been put into effect since, under the new law, the daily allowance is to be paid without restrictions. A daily allowance will not be paid for distances under 2km. Discontinuation of the 10%-Rule the compensation will now be calculated as follows:

Breakfast = 20% (as before)  
Lunch = 40% (before 35%)  
Dinner = 40% (before 35%)



This means that when reductions to the daily allowance are made in cases where meals are included in the trip, the 10% for “other purposes” will no longer be paid out.

### **Übernachtungsgeld §7 (Overnight accommodation/lodging)**

A flat rate of €20.00 will be granted for lodging without any verification. If you prove your actual costs they will be reimbursed. For long stays at the same location – longer than 14 days – the flat rate is no longer applicable. There will be no compensation for lodging when business is taken care of at night and due to this, no lodging is needed or when free lodging is made available. Costs for lodging are seen as necessary when the amount does not exceed €60.00. In this case, a justification is not needed. However, when the costs of lodging exceed €60.00, this should be justified and stated.

- o If the travel office has already acknowledged the expected higher costs prior to the trip, a later justification is not necessary. Room and board will always be fully compensated, even if they are listed separately on the bill. Exception: when breakfast is considered a separate, optional service (e.g.: at Ibis Hotels, overnight costs generally do not include breakfast – it is an extra service).
- o The flat rate grant for lodging may also be claimed when free lodging is available out of private reasons; e.g.: with friends, children with their own home, ex spouses, etc. When staying with relatives, it must be their own, independent household.

### **Längerer Aufenthalt am Geschäftsort §8 (Longer stays at the same business location)**

Starting on the 15th day, the daily allowance will be reduced by 50%. In special cases, this reduction may be waived; however, in such cases, a strict measure is to be applied (if due to the type of business, this reduction can not be contested). This does not apply to lodging costs.

### **Aufwands- und Pauschalvergütung §9 (Expense and flat-rate reimbursement)**

No changes – possible as before

### **Erstattung sonstiger Kosten §10**

#### **Substantial changes to the reimbursement of parking costs**

The new law only allows the reimbursement of €5.00 Euros per calendar day.

In compellable situations, the actual price may be reimbursed; e.g. if no timely connection to the airport/train station is available with public transportation methods.

This may lead to more workers relying on taxis or rental cars. This is ok if urgent business or personal reasons exist, a timely connection with public transportation is not available, or for trips between 23:00pm and 6:00am. When using a private vehicle for considerable business reasons, the full parking costs may be reimbursed.

### **Verbindung mit privaten Reisen §13 (combining with a personal trip)**

Applies when the trip is extended due to personal reasons

If the private extension is longer than 5 working days, the complete costs for the travel will not be reimbursed by the employer!

## Things to do When Leaving

- Give notice of leaving to your landlord  
Check your renting contract to find out how long before leaving you have to give notice (usually 3 months in advance). Give notice in writing. Make sure you have a proof of delivery (by either handing over the note personally against signature or by mailing it as “Einschreiben mit Rückschein” (registered mail with return receipt)).  
Arrange a time with the landlord to come and view the flat before you leave. He will check to make sure that everything is in order (i.e. that nothing is damaged) and then pay your deposit (or part of it in case of damages) back to you. Check in advance in which form this repayment will be made. If you will be given a cheque you will have to deposit it in your bank account at least a day before closing the account.
- End health insurance (if not limited anyway)
- Close electricity and telephone account (for which you will normally have given direct debit authorization).
- Unregister at the Einwohnermeldeamt
- Terminate any standing orders with your bank (e.g. for rent) in time and finally close bank account.
- Leave your future address in the IMPRS Office
- Give a copy of your PhD thesis in digital form (PostScript or PDF) to the IMPRS Office (not necessary if you submitted an electronic version to the eLibrary of the University of Bonn (ULB) or Cologne (KUPS)).
- Return the IMPRS Notebook and security lock to the IMPRS Office.
- Return IMPRS book(s) to the IMPRS Office.
- MPIfR: “work off” the Laufzettel/Circular letter (i.e. return keys, transponder, return books to the library, pay outstanding bills etc.)



## Some general Information

### Information on the German system of waste disposal

Germany has a selective system of waste disposal. Since the local authorities are in charge of waste management, this can vary from town to town. In Bonn waste disposal is organized in the following way:

Every household in general has 4 bins: a black, a green, a blue and a yellow one. The waste has to be sorted according to the material it consists of and is to be disposed of as follows:

**Glass** (non-returnable bottles, food containers such as jam jars) has to be disposed of separately. In all neighbourhoods one can find glass containers. The glass has to be sorted according to its colour (brown, green and white glass). The glass containers closest to the MPI are situated at the corner of Auf dem Hügel/Bleichgraben (road leading to the MPI parking).

#### Bulky waste

All household furnishings that are too bulky for disposal in waste bins such as furniture, lamps, cupboards/wardrobes, carpets (up to 50 m<sup>2</sup>), shelves, tables and chairs.

**Collection:** Street collection 4 times a year

**You should not add:** Vehicle parts, old clothes, building waste, domestic waste, electrical appliances, waste requiring special disposal, cartons, and packaging

#### Waste requiring special disposal

- Large electrical appliances  
Such as refrigerators, TV sets or hi-fi equipment, computers, dishwashers, washing machines, etc.  
→ For free collections of these please phone: 01801/880066 (SITA Wagner GmbH)
- Small electrical appliances  
Such as toasters, irons, coffee machines, portable radios, hairdryers, etc.  
→ Red bins at Lieveingsweg 110 (Office for City Cleaning and Waste Management), town hall
- Paint, lacquer, solvents, fluorescent and energy-saving lamps, alkaline solutions, acids, batteries, cleaning agents  
→ Waste Recycling Plant, Am Dickobskreuz

Waste disposal schedules are generally distributed to every household by the city of Bonn (Amt für Stadtreinigung und Abfallwirtschaft).

You can also get your personal schedule from the following page:

[http://www.bonn.de/umwelt\\_gesundheit\\_planen\\_bauen\\_wohnen/abfallplaner/index.html?lang=en](http://www.bonn.de/umwelt_gesundheit_planen_bauen_wohnen/abfallplaner/index.html?lang=en)

First click your postal code district in the map displayed there, then choose your street name in the list, enter the street number and click "Auswählen". Use either "Abfallplaner drucken" (top) or "Seite ausdrucken" (bottom) to make a printout.

## VRS Bus Ticket Prices

For short trips there is the **Kurzstreckenticket (Short Trip Ticket)**, with which you can travel generally up to four stations. In some cases, however, also more; if in doubt check the list of short trip destinations (Kurzstreckenziele) displayed at each bus stop or ask the driver.

**CityTicket 1a** For inner-city trips in cities and communities **other** than Bonn or Cologne

**CityTicket 1b** For inner-city trips in **Bonn or Cologne**

**CityPlusTicket 2a** For trips between all neighbouring cities or communities **if not** from/to Bonn or Cologne

**CityPlusTicket 2b** For trips from/to Bonn or Cologne to a neighbouring city or community

**RegioTicket 3**

**RegioTicket 4** Regional transport (fare depends on distance)

**RegioTicket 5ü**

**RegioTicket 5 Netzticket (network ticket)** – for unrestricted trips in the entire syndicated region and on individual lines in some cities and communities bordering the association area.

At each bus stop you will find a list of destinations and the ticket which is needed to get there.

Zielort	Preisstufe	
Kerpen	3	
Kirchen	5	
Köln	1b	
Königswinter	4	
Korschenbroich	4	
über Düsseldorf	5ü	

## Other Tickets

- **Available for all price levels**

### 4-Ticket (also called Streifenkarte)

One ticket for 4 trips. You have to validate one field per trip. This ticket can also be used by several people at the same time. There are two types of the ticket: one is to be validated four times on one side (starting from the bottom) and the other can be validated two times on the front and two times on the back.

- **Available for all price levels except short trip/Kurzstrecke**

### Day Ticket (TagesTicket) 1 Person

If you wish to travel several times a day, you should choose this ticket. It is valid the whole day until 3 a.m. on the following day. During this period of time you can get on and off, change, make round trips and interrupt your journey as often as you like.

### Day Ticket (TagesTicket) 5 People

With this ticket small groups of up to 5 people – no matter whether they are adults or children – can travel from 9 a.m. until 3 a.m. on the following day. On weekends and holidays the ticket is valid also before 9 a.m.

Children up to the age of 5 travel free of charge (therefore are not counted).

**Group Tickets (Gruppen Tickets) for groups of 10 people or more**

This fare has to be purchased for at least ten people, even if the group is actually smaller, according to the following rule:

Per two adults one Single Ticket for adults (of the respective price level) has to be purchased. In case of an odd number for every passenger one Single Ticket for children has to be bought.

Note: Only interesting if the group intends to travel **before 9 a.m.** during the week or one way only. Otherwise the Day Ticket for 5 people is the cheaper option!

**Validation:** Tickets have to be validated in one of the two machines (usually yellow) that are placed next to the front and middle entrance of the bus.  
Tickets for single trips (i.e. not DayTickets or 4-Tickets) which were bought in a ticket machine or in the bus are already validated for immediate use.

**Period of validity**

Single and 4-Tickets (see below) may only be used for a certain period of time after their validation – depending on the price level. During this period of time you may interrupt your trip and – if necessary – change the means of transport. Detours, round trips or return trips are not possible.

for a short trip:	20 minutes
for trips at price levels 1a and 1b (CityTicket):	90 minutes
for trips at price levels 2a and 2b (CityPlusTicket):	120 minutes
for trips at price levels 3 and 4 (RegioTicket):	180 minutes
for trips at price level 5 (RegioTicket):	360 minutes