



universität**bonn**

Universität zu Köln



Bonn-Cologne Graduate School  
of Physics and Astronomy

# Course Overview

Summer Term 2010

bcgs





# BCGS Course Overview

## Summer Term 2010

This list of courses provides an overview of lectures and seminars offered within the Master and Diploma course programmes in Bonn and Cologne.

Certain courses are assigned as “Special BCGS courses” such as joined courses given by lecturers from both universities, courses broadcasted to the other university by video conference, courses given as teaching exchange between both universities, or (lab) courses facilitating “early-on-research”.

Further, you will find courses classified according to the three main research areas covered by the Graduate School: Particle and Nuclear Physics - Astronomy and Astrophysics - Condensed Matter and Statistical Physics, Photonics. Courses offered at only one University are marked with a star, e.g. the complementary course offers of Biophysics (Cologne) or Photonics (Bonn).

You may choose your personal curriculum with respect to your scientific interests within the terms of the corresponding Master programmes in Bonn and Cologne. In case you need any support do not hesitate to ask your mentors or the administration.

## Contents

|  |    |
|--|----|
| Special BCGS Courses.....                              | 3  |
| General Courses.....                                   | 5  |
| Particle and Nuclear Physics.....                      | 5  |
| Astronomy and Astrophysics.....                        | 8  |
| Condensed Matter and Statistical Physics, Photonics... | 11 |
| BCGS Poster Session.....                               | 14 |
| Science meets Business.....                            | 15 |

## List of Abbreviations

### Institutes in Bonn


- PI - Physikalisches Institut  
Nussallee 12, 53115 Bonn
- HISKP - Helmholtz - Institut für Strahlen- und Kernphysik  
Nussallee 14-16, 53115 Bonn
- IAP - Institut für Angewandte Physik  
Wegelerstr.8, 53115 Bonn
- AlfA - Argelander-Institut für Astronomie  
Auf dem Hügel 71, 53121 Bonn
  
- MPIfR - Max-Planck-Institut für Radioastronomie  
Auf dem Hügel 69, 53121 Bonn


### Institutes in Cologne


- I. PI - I. Physikalisches Institut
  - II. PI - II. Physikalisches Institut
  - IKP - Institut für Kernphysik
  - THP - Institut für Theoretische Physik
- Zùlpicher Str. 77, 50937 Köln

### Rooms

- SR - Seminar Room
- CR - Conference Room
- KOSMA - KOSMA Room
- Lib - Library
- LH - Lecture Hall

Video Conference 

Teaching Exchange 

Joined Course 

Complementary Lectures/Seminars 

# Special BCGS Courses

## Lectures

physics716  
6193



Statistical Methods of Data Analysis  
Mo 9-11, LH, IAP, Bonn  
Lecture is broadcasted to Cologne: Lib IKP  
Exercises: 1 hr in groups

*K. Desch*

astro844  
6194



X-ray astronomy  
Fr 13-15, LH Astronomy, Bonn  
Lecture is broadcasted to Cologne: KOSMA I. PI  
Exercises: 1 hr by appointment

*T. Reiprich*

astro845  
6195



Observational cosmology  
We 11-13, LH 0.01, MPIfR, Bonn  
Lecture is broadcasted to Cologne: KOSMA I. PI  
Exercises: 1 hr by appointment

*C. Porciani, K. Basu*

6180(K)



Evolutionary Biology and Genomics for Physicists  
4 hrs We 14-16, Fr 10-12, CR THP, Cologne  
Broadcasted to Bonn: We CR, IAP, Fr CR II, PI  
Tutorials: Tu 10-12, SR THP, Cologne  
by video CR II, PI, Bonn

*J. Krug, M. Lässig*

6182(K)



Ill-condensed matter: an introduction to  
the Physics of Disordered Systems  
4 hrs Mo 14-15.30, We 12-13.30, SR THP, Cologne  
Broadcasted to Bonn: Mo CR, IAP, We LH, IAP  
Exercises: 2 hrs Tu 14-15.30, SR THP, Cologne

*T. Nattermann*

6188(K)



Astrochemistry  
2 hrs We 14-15.30, SR I.PI, Cologne  
Lecture is broadcasted to Bonn: TBD

*P. Schilke, S. Schlemmer*

6190(K)



Semiconductor Physics and Nanostructures  
2 hrs Tu 12-13.30, LH III, Cologne  
Lecture is broadcasted to Bonn: CR II, PI

*R. Wördenweber*

Due to technical support issues, lectures by video might be shifted to other rooms on short notice.  
Please check the BCGS web site and local announcements.

**Seminars**

physics659  
6219



BCGS Seminar on experiments at the new Large Hadron Collider (LHC, Geneva) and the Facility of Antiproton and Ion Research (FAIR, Darmstadt)  
Mo 16-18, in turn R 300, PI, Bonn, Lib IKP, Cologne  
First meeting: Mo 19.04., in Cologne

*I. Brock, K. Desch,  
E. von Törne, N. Wermes,  
A. Blazhev, J. Jolie, H. Ströher*

**Research Internships**

Students become a temporary member of a research group for a typical duration of four weeks, further information:  
<http://www.gradschool.physics.uni-koeln.de>,  
for similar courses, see

physics717

High Energy Physics Lab, Bonn  
4 to 6 weeks on agreement

*E. von Törne*

physics732

Optics Lab, Bonn  
4 to 6 weeks on agreement  
<http://www.iap.uni-bonn.de/opticslab/>

*K. Buse, M. Fiebig,  
D. Meschede, F. Vewinger,  
M. Weitz*

6197

Miniforschung (Internship during semester break for advanced students), Cologne

*Professors and Lecturers  
of the Physics Institutes*

**Intensive Courses**

BCGS Intensive Week:  
Nuclear Shell Model - Hands-on, Cologne  
1 week, 22.-26.03.2010  
<http://www.ikp.uni-koeln.de/>

*K. Heyde, U. Meißner,  
H. Grawe, A. Blazhev*

# General Courses




---

|            |  |                              |
|------------|--|------------------------------|
| physics774 | Electronics for Physicists<br>Tu 10-12, Th 12, LH, HISKP, Bonn<br>Exercises: 1 hr in groups                            | <i>P.-D. Eversheim</i>       |
| physics775 | Nuclear Reactor Physics<br>Th 14-16, SR I, HISKP, Bonn   | <i>A. Gillitzer, R. Jahn</i> |
| 6170       | Geometry in Physics<br>4 hrs Tu 12-13.30, SR THP, We 14-15.30, LH II,<br>Exercises: 2 hrs Fr 12-13.30, SR THP, Cologne | <i>A. Altland</i>            |
| 6216       | Advanced Seminar on "Physical and technical<br>aspects of future energy supply"<br>2 hrs Th 10-11.30, Lib IKP, Cologne | <i>A. Dewald</i>             |

---

# Particle and Nuclear Physics

---

|   |  |   |
|---|--|---|
| physics632  | Physics of Hadrons<br>We 13-15, Fr 13, CR I, PI, Bonn<br>Exercises: 1 hr in groups                               | <i>H. Schmieden</i>                         |
| physics633<br> | High Energy Collider Physics<br>Tu 14-16, LH I, PI, We 8-10, LH, IAP, Bonn<br>Exercises: 1 hr in groups included | <i>E. von Törne, N. Wermes</i>              |
| physics636<br> | Advanced Theoretical Particle Physics<br>Mo 12, Th 10-12, LH I, PI, Bonn<br>Exercises: 2 hrs in groups           | <i>S. Förste</i>                            |
| physics637<br> | Advanced Theoretical Hadron Physics<br>We 10-13, SR II, HISKP, Bonn<br>Exercises: 2 hrs in groups                | <i>E. Epelbaum, A. Nogga,<br/>A. Wirzba</i> |

---

## Particle and Nuclear Physics

---

|                 |   |  |
|-----------------|---|--|
| physics639<br>★ | Advanced Topics in High Energy Particle Physics<br>Tu 12, Th 8-10, LH, IAP, Bonn<br>Exercises: 1 hr in groups   | <i>I. Brock</i>                              |
| physics711      | Particle Astrophysics and Cosmology<br>Mo 11, LH, IAP, Tu 8-10, SR I, HISKP, Bonn<br>Exercises: 1 hr in groups  | <i>M. Kowalski</i>                           |
| physics712      | Advanced Electronics and Signal Processing<br>We 14-16, Fr 12, LH, IAP, Bonn<br>Exercises: 1 hr in groups   | <i>M. Barbero, F. Hügging,<br/>H. Krüger</i> |
| physics713      | Particle Detectors and Instrumentation<br>Mo 14, LH, IAP, Th 14-16, CR I, PI, Bonn<br>Exercises: 1 hr in groups   | <i>H. Schmieden</i>                          |
| physics714<br>★ | Advanced Accelerator Physics<br>We 10-12, LH, IAP, Th 10, SR I, HISKP, Bonn<br>Lecture on 15.04.2010 takes place in LH, HISKP<br>Exercises: 1 hr in groups included | <i>W. Hillert, A. Lehrach,<br/>R. Maier</i>  |
| physics751<br>★ | Group Theory<br>We 14-16, Fr 9, LH I, PI, Bonn<br>Exercises: 2 hrs in groups  | <i>S. Förste, C. Lüdeling</i>                |
| physics752<br>★ | Superstring Theory<br>Tu 12, Fr 14-16, LH I, PI, Bonn<br>Exercises: 2 hrs in groups   | <i>A. Klemm</i>                              |
| physics753<br>★ | Theoretical Particle Astrophysics<br>Tu 16-18, Fr 12, HS I, PI, Bonn<br>Exercises: 2 hrs in groups  | <i>M. Drees</i>                              |
| physics755      | Quantum Field Theory<br>Tu 14-16, SR II, HISKP, We 8, LH I, PI, Bonn<br>Exercises: 2 hrs in groups  | <i>U. Meißner, A. Rusetsky</i>               |
| 6823            | Stochastic Interacting Particle Systems<br>Th 16-18, SR II, HISKP, Bonn   | <i>G. Schütz</i>                             |

---








|   |  |   |
|---|--|---|
| 6824<br>       | Introduction to supersymmetry<br>block course: 31.05.-01.06.2010, Bonn                                     | <i>E. Kraus</i>   |
| physics653<br> | Seminar on Current Topics in Experimental<br>Hadron and Accelerator Physics<br>Tu 10-12, SR I, HISKP, Bonn | <i>W. Hillert, U. Thoma</i>   |
| physics658<br> | Seminar on Astroparticle Physics<br>Fr 10-12, SR II, HISKP, Bonn   | <i>M. Drees, M. Kowalski,<br/>E. von Törne, S. Boeser, K. Paech</i>                                   |
| 6172  | Particle Physics<br>3 hrs on agreement, SR IKP, Cologne  | <i>M. Büscher, D. Gotta,<br/>S. Schadmand, H. Ströher</i>   |
| 6173<br>       | Accelerator Mass Spectroscopy<br>2 hrs We 16-17.30, SR THP, Cologne  | <i>A. Dewald</i>  |
| 6178  | Symmetries in Atomic Nuclei<br>2 hrs We 14-15.30, SR IKP, Cologne  | <i>J. Jolie</i>   |
| 6191  | Nuclear Astrophysics<br>2 hrs We 10-11.30, SR IKP, Cologne   | <i>A. Zilges</i>  |
| 6215<br>       | Advanced Seminar on Nuclear Physics<br>2 hrs Mo 14-15.30, SR IKP, Cologne                                  | <i>M. Büscher, D. Gotta, J. Jolie,<br/>P. Reiter, A. Zilges, H. Ströher,<br/>A. Dewald, K.O. Zell</i> |
| 6218  | Advanced Seminar in Radiation Physics<br>2 hrs Tu 15-17, Lib IKP, Cologne                                  | <i>J. Jolie</i>   |
| 6226<br>     | Advanced Seminar on Nuclear Astrophysics<br>2 hrs We 10-11.30, Lib IKP, Cologne                            | <i>A. Zilges, J. Hasper</i>   |

# Astronomy and Astrophysics

---

|          |  |  |
|----------|--|--|
| astro821 | Astrophysics of galaxies<br>Th 15-18, Fr 9, LH Astronomy, Bonn<br>Exercises: 2 hrs in groups                           | <i>P. Kroupa, I. Georgiev</i>                                  |
| astro822 | Physics of the interstellar medium<br>Tu 16-19, LH Astronomy, Bonn<br>Exercises: 1 hr by appointment                   | <i>F. Bertoldi, K.K. Knudsen</i>                               |
| astro846 | Wave optics and astronomical applications<br>We 15.30-17, LH 0.02, MPIfR, Bonn   | <i>G. Weigelt</i>  |
| astro847 | Practical optical astronomy<br>Details to be announced   | <i>M. Geffert, T. Erben</i>                                    |
| astro848 | Galactic and intergalactic magnetic fields<br>Mo 9-11, LH Astronomy, Bonn<br>Exercises: 1 hr by appointment            | <i>U. Klein</i>  |
| astro849 | Multiwavelength observations of galaxy clusters<br>Mo 15.30-17, LH 0.01, MPIfR, Bonn<br>Exercises: 1 hr by appointment | <i>T. Reiprich, Y. Zhang,<br/>H. Andernach</i>                 |
| astro851 | Stellar and solar coronae<br>Th 9-10.30, LH 0.01, MPIfR, Bonn<br>Exercises: 1 hr by appointment                        | <i>M. Massi</i>  |
| astro852 | Gravitational lensing<br>Tu 10-12, LH Astronomy, Bonn<br>Exercises: 1 hr by appointment                                | <i>P. Schneider, O. Wucknitz</i>                               |
| astro858 | Nucleosynthesis<br>Th 11-13, Fr 9, R 0.05, Bonn<br>Exercises: 1 hr by appointment                                      | <i>N. Langer, S. Yoon</i>                                      |
| astro891 | Seminar on modern cosmology<br>Mo 11-13, R. 0.05, Bonn   | <i>C. Porciani, T. Reiprich,<br/>P. Schneider, O. Wucknitz</i> |

---

|   |  |  |
|---|--|--|
| astro892  | Seminar on radio astronomy<br>Th 13-14.30, R. 0.05, Bonn   | <i>F. Bertoldi, J. Kerp, U. Klein,<br/>K.K. Knudsen, M. Kramer,<br/>W. Vlemmings</i>   |
| astro893  | Seminar on stars, stellar systems, and galaxies<br>Fr 14-16, R. 0.05, Bonn   | <i>P. Kroupa, N. Langer</i>  |
| astro894  | Seminar on astronomy and astrophysics<br>Mo 14-15.30, LH Astronomy, Bonn   | <i>P. Kroupa, F. Bertoldi, J. Kerp,<br/>U. Klein, M. Kramer, N. Langer,<br/>M. Massi, M. Menten,<br/>C. Porciani, T. Reiprich,<br/>P. Schneider, G. Weigelt,<br/>O. Wucknitz</i> |
| 6943<br>   | Hydrodynamics<br>We 13.30-15, LH Astronomy, Bonn   | <i>J. Braithwaite</i>  |
| 6944<br>   | Introduction to space and astrophysical plasmas<br>Th 11-13, LH Astronomy, Bonn<br>Exercises: 2 hrs by appointment | <i>C. Watts</i>  |
| 6945  | Accretion in astrophysics: theory and applications<br>Details to be announced<br>Exercises: 1 hr by appointment    | <i>P. Podsiadlowski</i>  |
| 6965<br>   | Seminar on cosmology and selected problems<br>in gravitational lensing research<br>Tu 14-16, R. 3.19, Bonn         | <i>P. Schneider and staff</i>  |
| 6966  | Seminar on theoretical dynamics<br>Fr 9-11, R. 3.19, Bonn  | <i>P. Kroupa</i>   |
| 6968<br> | Seminar on strong gravitational lensing and<br>lens modelling<br>Fr 17-19, R. 3.19, Bonn                           | <i>O. Wucknitz and staff</i>   |
| 6970  | Seminar on galaxy clusters<br>Th 15-17, R. 3.19, Bonn  | <i>T. Reiprich, Y. Zhang</i>   |
| 6971<br> | Seminar on stellar evolution and hydrodynamics<br>Th 13.30-15, R. 3.19, Bonn                                       | <i>J. Braithwaite, N. Langer,<br/>S. Yoon</i>  |

## Astronomy and Astrophysics

---

|   |  |   |
|---|--|---|
| physics711  | Particle Astrophysics and Cosmology<br>Mo 11, LH, IAP, Tu 8-10, SR I, HISKP, Bonn<br>Exercises: 1 hr in groups | <i>M. Kowalski</i>  |
| physics658<br> | Seminar on Astroparticle Physics<br>Fr 10-12, SR II, HISKP, Bonn   | <i>M. Drees, M. Kowalski,<br/>E. von Törne, S. Boeser, K. Paech</i> |
| 6174  | Galaxy Dynamics<br>2 hrs We 12-13.30, SR I. PI, Cologne  | <i>A. Eckart</i>  |
| 6175<br>       | Molecular Physics II<br>3 hrs Mo 10-11.30, Tu 12, SR I. PI,<br>Exercises: 1 hr Tu 13, SR I. PI, Cologne        | <i>T. Giesen</i>  |
| 6183  | Physics of the Interstellar Medium<br>2 hrs Th 10-11.30, SR I. PI, Cologne                                     | <i>V. Ossenkopf</i>   |
| 6184<br>       | Inertial Confinement Fusion<br>3 hrs Mo 8-9.30, and on agreement, SR I. PI, Cologne                            | <i>S. Pfalzner</i>  |
| 6185  | Star Formation<br>3 hrs We 8-9.30, and on agreement, SR I. PI, Cologne   | <i>S. Pfalzner</i>  |
| 6189  | Experimental Methods in Astrophysics<br>2 hrs Fr 12-13.30, SR I. PI, Cologne                                   | <i>J. Stutzki</i>   |
| 6191  | Nuclear Astrophysics<br>2 hrs We 10-11.30, SR IKP, Cologne   | <i>A. Zilges</i>  |
| 6209  | Advanced Seminar on Current Problems in<br>Physics and Astrophysics<br>2 hrs Mo 16-17.30, SR I. PI, Cologne    | <i>A. Eckart, P. Schilke,<br/>S. Schlemmer, J. Stutzki</i>          |
| 6221  | Advanced Seminar on Current Problems in<br>Theoretical Astrophysics<br>2 hrs Tu 8.30-10, SR I. PI, Cologne     | <i>S. Pfalzner</i>  |
| 6226<br>     | Advanced Seminar on Nuclear Astrophysics<br>2 hrs We 10-11.30, Lib IKP, Cologne                                | <i>A. Zilges, J. Hasper</i>   |



---

# Condensed Matter and Statistical Physics, Photonics

|   |   |  |
|---|---|--|
| physics631<br>   | Quantum Optics<br>Tu 10-12, Th 10-12, LH, IAP, Bonn<br>Exercises: 1 hr in groups included                     | <i>D. Meschede</i>                               |
| physics634  | Magnetism and Superconductivity<br>Th 12, Fr 8-10, LH, IAP, Bonn<br>Exercises: 1 hr in groups                 | <i>M. Fiebig</i>                                 |
| physics635<br>   | Laser Spectroscopy<br>Tu 8-10, Th 14-16, LH, IAP, Bonn<br>Exercises: 1 hr in groups included                  | <i>F. Vewinger</i>                               |
| physics638  | Advanced Theoretical Condensed Matter Physics<br>Mo 16-18, We 9, LH I, PI, Bonn<br>Exercises: 2 hrs in groups | <i>J. Kroha</i>                                  |
| physics652<br>   | Seminar on Recent Topics in Nanophotonics<br>and Nonlinear Optics<br>Tu 14-16, LH, IAP, Bonn                  | <i>S. Linden, D. Haertle,<br/>T. Lottermoser</i> |
| physics654  | Seminar on Modern Computational Methods in<br>Condensed Matter Theory<br><i>Tu 10-12, SR II, HISKP, Bonn</i>  | <i>H. Monien</i>                                 |
| physics655  | Seminar on Quantum Field Theory Methods in<br>Condensed Matter Physics<br><i>Th 10-13, SRI, PI, Bonn</i>      | <i>H. Monien</i>                                 |
| physics656  | Seminar Medical Physics: Physical Fundamentals<br>of Medical Imaging<br>Mo 14-16, SR I, HISKP, Bonn           | <i>K. Lehnertz, K. Maier</i>                     |
| physics657<br> | Seminar on Environmental Physics<br>Th 13.30-15, LH 118, AVZ, Bonn  | <i>B. Diekmann, T. Reichelt</i>                  |

## Condensed Matter and Statistical Physics, Photonics

---

|   |  |                           |
|---|--|---------------------------|
| physics739<br> | Lecture on Advanced Topics in Photonics:<br>"Ultrashort Laserpulses:<br>Generation and Applications"<br>Fr 10-12, LH, IAP, Bonn<br>Exercises: 1 hr in groups               | <i>F. Vewinger</i>        |
| physics739a   | Der schöne Schein: Der Laser wird 50!<br>Mo 14-16, LH I, PI, Bonn<br>Übungen: 1 h in Gruppen   | <i>D. Meschede</i>        |
| physics740  | Hands-on Seminar: Experimental Optics and<br>Atomic Physics<br>preparatory meeting: see announcement<br>Mo 9-11 or 11-13, laboratories of the research<br>group, IAP, Bonn | <i>M. Weitz and staff</i> |
| physics773  | Physics in Medicine II:<br>Fundamentals of Medical Imaging<br>Mo 9-11, We 12, SR I, HISKP, Bonn<br>Exercises: 1 hr in groups   | <i>K. Lehnertz</i>        |
| 6171  | Magnetism<br>2 hrs Tu 14-15.30, SR II, PI, Cologne   | <i>M. Braden</i>          |
| 6176<br>       | Solid State Physics III<br>3 hrs We 10-11.30, Fr 10, SR II.PI, Cologne   | <i>M. Grüniger</i>        |
| 6179  | Laser in der Medizin<br>3-Tage Blockkurs in den Semesterferien,<br>Informationen und Anmeldung unter<br>kessler@rheinahr-campus.de   | <i>B. Kessler</i>         |
| 6186  | High Temperature Superconductors<br>2 hrs Fr 14-15.30, SR I, PI, Cologne   | <i>J. Röhler</i>          |
| 6187  | Quantum Field Theory I<br>4 hrs Mo 12-13.30, SR THP, We 12-13.30, LH III,<br>Exercises: 2 hrs Tu 14-15.30, CR THP, Cologne   | <i>A. Rosch</i>           |
| 6192  | Experimental Methods in Solid State Physics<br>2 hrs Tu 10-11.30, SR II, PI, Cologne   | <i>M. Sing</i>            |

---

---

|   |  |  |
|---|--|--|
| 6210<br> | Advanced Seminar on Current Problems in Solid State Physics<br>“Surfaces and Interfaces: Effects and Functionality”<br>2 hrs Mo 14-15.30, SR II. PI, Cologne | <i>M. Abd-Elmeguid, M. Braden,<br/>M. Grüniger, T. Michely</i> |
| 6214<br> | Advanced Seminar: Magnetism and Spintransport in Nanostructures<br>2 hrs Th 10-11.30, CR THP, Cologne  | <i>D. E. Bürgler, P. Grünberg</i>                              |
| 6217<br> | Advanced Seminar: Evolutionary Dynamics<br>2 hrs We 16-17.30, CR THP, Cologne  | <i>J. Krug, M. Lässig</i>                                      |
| 6223<br> | Advanced Seminar on Topological Insulators<br>2 hrs Mo 16-17.30, SR II. PI, Cologne<br>Preparational Meeting: 12.04.2010                                     | <i>A. Rosch, M. Vojta,<br/>M. Zirnbauer</i>                    |
| 6224<br> | Advanced Seminar on Disordered Systems<br>2 hrs Mo 10-11.30, CR THP, Cologne   | <i>T. Nattermann</i>   |

---

# Poster Session: Insights into the research projects of the BCGS-members

Once a year, BCGS-students present their scientific work in a poster session providing insights into their research projects.

The next session will take place

20.04.2010, 14.30 h  
Foyer of the Physics' Institutes  
Zülpicher Str. 77 in 50937 Cologne

Additionally, there will be a Colloquium talk at 16:45 h in Lecture Hall I,  
Speaker: Prof. Dr. Metin Tolan, TU Dortmund  
"So werden wir WELTMEISTER · Die Physik des Fußballspiels"

We cordially invite all interested students and faculty to discuss at the posters and the informal get-together after the talk



# Science meets Business

Within the lecture series “Science meets Business” physicists report on their working experiences in the Industry as well as career opportunities and new frontiers in industrial research.

Usually, these events are scheduled once per year.

The next event will take place

14.07.2010, 16.15 h  
Wolfgang-Paul-Hörsaal  
Kreuzberg 28 in 53115 Bonn

Speaker: Dr. Carsten Bühner (Zenergy Power)

All interested students are cordially invited. Discussions are strongly encouraged.

Dr. Carsten Bühner holds a BS in medicine and a MS and PhD in physics from Bonn University. He has been CTO (chief technical officer) of Zenergy Power plc since 2006 and CEO of the group's German subsidiary Zenergy Power GmbH (formerly Trithor GmbH) of which he was a co-founder. He is an expert in intellectual property rights with several patents.

Notes





universität**bonn**i

Universität zu Köln



**Universität Bonn**

Bonn-Cologne Graduate School  
of Physics and Astronomy  
Wegelerstr. 8  
53115 Bonn  
Germany

Phone: +49 228 733482

Fax: +49 228 736836

Email: [gradschool.physics@uni-bonn.de](mailto:gradschool.physics@uni-bonn.de)

<http://www.gradschool.physics.uni-bonn.de>

**Universität Köln**

Bonn-Cologne Graduate School  
of Physics and Astronomy  
Zùlpicherstr. 77  
50937 Köln  
Germany

Phone: +49 221 4703554

Fax: +49 221 4706727

Email: [gradschool.physics@uni-koeln.de](mailto:gradschool.physics@uni-koeln.de)

<http://www.gradschool.physics.uni-koeln.de>



bcgs