

PHYSICS AT THE TERASCALE

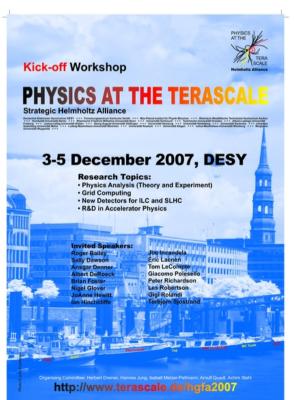
Strategic Helmholtz Alliance



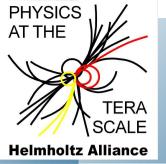
Review of Positions International Advisory Board

05/12/2008

Ian C. Brock

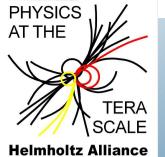






Outline

- Young Investigator Groups
- Other tenure-track positions
- Fellows
- Detector
- Grid
- Other positions
- Conclusions



Young Investigator Groups

- Phenomenolgy
 - HU Berlin
 - Göttingen
 - Karlsruhe
- Experiment
 - Dresden
 - Wuppertal
- Accelerator
 - Hamburg



The Strategic Helmholtz Alliance "Physics at the Terascale" (http://www.terascale.de) is a research network supported by the Helmholtz Associaction and comprises the research centres DESY and FZ Karlsruhe, 17 German universities, and the Max-Planck Insitute for Physics. In the framework of the worldwide endeayour of studying the foundations of matter using accerelators with highest energies. the Alliance will sustainably bundle and advance the expertise and strengths of the participating

In the Institute for Nuclear and Particle Physics at

TECHNISCHE UNIVERSITÄT DRESDEN

In the Institute for Nuclear and Particle Physics at the Faculty of Science we have an immediate opening for a tenure track

The successful applicant will lead a "Young Investigator Group" of the Helmholtz Alliance. He/she will be engaged in data analysis of the ATLAS experiment at the LHC as well as in detector R&D for the "International Linear Collider", ILC. Close collaboration is expected with the research groups on experimental and theoretical particle physics and with the electronics lab of the institute. The candidate is expected to participate in general teaching activities of the Department of Physics and especially in teaching of the advanced level courses in "Nuclear and Particle Physics".

We are looking for applicants with a Ph.D. in experimental particle physics, whose excellent achievements as a Post-Doc in an international particle physics collaboration qualify them as a leader of a "Young Investigator Group". The group will be funded from the Helmholtz Alliance

Employment prerequisites are in accordance with the Saxony University rules candiopulations (§ 46 Saxony University Statues – new version). Accordingly, the candidate will have completed a university degree, have the educational qualifications, as well as specialized knowledge in research work (normally an excellent doctorate /PhD). Junior Professors will be offered up to a four year contract. This contract, after a positive intermediate evaluation, can be extended for a total of up to 6 years (§ 45 of the Saxony University Statutes - new version) to a fund of up to years (§ 45 or in Baskott) inherestly statutes "new version", Subject to a successful final evaluation a tenured position of a senior staff scientist will be granted at the institute after the end of the Junior-Professorship. Applications for professorships within Technische Universität Dresden are possible after the successful intermediate evaluation in line with the rules of the Saxony University Statues.

Applications from women are particularly welcome. The same applies to the

Please submit your application together with your CV, your scientific employment record, list of publications, copies of the certificate of your highest academic degree and copies of 5 publications before October 15, 2007 in electronic form to prodekan@physik.tu-dresden.de (note, that currently no receipt of digitally signed or encrypted documents is possible) and in written form to:

TU Dresden, Dekan der Fakultät Mathematik und Naturwissenschaften Herm Prof. Dr. M. Ruck, 01062 Dresden, Germany.



Universität Karlsruhe (TH)



The Institute for Theoretical Physics at the University of Karlsruhe (TH) has on opening in Theoretical Particle Physics for the

Leader of a Young Investigator Group on Monte Carlo Development

We are looking for a theoretical physicist with expertise in collider physics and the development of parton shower and hadronization Monte Carlo programs who will head a new Young Investigator Group which is being established at the will head a new Young investigation cloud which is being established at the Institute for Theoretical Physics within the Helmholtz Alliance *Physics at the Terascale*. The applicant should have a strong research background with several years of postdoctoral experience in particle physics phenomenology and Monte Carlo development for physics at the Large Hadron Collider.

The position is funded by the Helmholtz Alliance until June 2012 and remunerated according to the TVöD regulations for scientific employees. After this date, the position may become that of a permanent ecientific employee at the Institute for Theoretical Physics. The position can be filled January 1, 2008.

The University gims to increase the number of female scientists and generially welcomes applications from women. Handicapped persons with equa qualifications will be preferred.

Interested candidates are requested to submit their CV, description of professional experience and a statement about past and planned research activities before November 1, 2007, and should arrange for two letters of recommendation. Applications should be sent to

Frau Renate Weiss Institut für Theoretische Physik Universität Karlsruhe (TH) D-76128 Karlsruhe
Phone: +49 721/608-2081 Fax: +49 721/608-3582 E-Mail: weiss@particle.uni-karlsruhe.de For further information please contact Prof. D. Zeppenfeld Phone: +49 721/608-3553



GEORG-AUGUST-UNIVERSITÄT GÖTTINGEN

Fakultät für Physik

The Department of Physics of Georg-August-Universität Göttingen Invites application for a

Helmholtz-Juniorprofessorship (Salary scale W1 BBesO) of Theoretical Physics, in particular High Energy Particle Physics and

to be filled by January 1, 2008 (temporary appointment into civil service for a initial period of 3 years with a possible extension of another 3 years).

The successful applicant is expected to do research in the fields of Phenomenology of elementary particles and Physics at the Terascale

The objects of research are to supplement the current and future range in research topics of the group Experimental Particle Physics in the Department of Physics in the field of elementary particle physics at the Terascale (at LHC and ILC) and be closely integrated into the Helmholtz Alliance on "Physics at the Terascale". The successful candidate is expected to take part in teaching the subject of theoretical physics (Bachelor® and Master® courses) as well as the

Preconditions for appointments are laid down in § 30 of the Law on Highe Education of Lower Saxony of February 26, 2007 (official law gazette of Lowe Saxony, Nds. GVBI 5/2007, p. 69). In case the completion of the doctorate was preceded or followed by employment as an academic assistant or collaborato the period of the doctorate and the period of employment together should no exceed six years.

Further details can be obtained on request We explicitly welcome applications form abroad.

Under certain circumstances part-time employment is possible. Disabled persons with corresponding aptitude for the position will be favoured. The University strives to increase its proportion of female staff and expressly encourages qualified women to apply.

Applications, including a CV, a description of your teaching and research track record, a list of publications and a list or reprints of the five most important publications are requested by October 15, 2007 and should be sent to

Georg-August-Universität Göttingen Fakultät für Physik Der Dekan Friedrich-Hund-Platz 1 37077 Göttinger

The Faculty of Mathematics and Natural Sciences I of Humbold University Berlin at the Institute of Physics has an opening for a

Helmholtz Junior-Professorship (W1) for "Phenomenology of Elementary Particle Physics beyond the Standard Mode starting January 1⁸¹, 2008.

The successful applicant will conduct research and teaching in the area of theoretical elementary particle physics. Preferred areas of research are model building and phenomenology beyond the standard model and/or precision calculations of scattering processes with modern techniques.

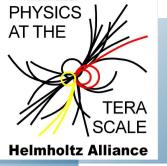
The candidate is expected to meaningfully complement the existing research activities in theoretical particle physics and to support the accelerator based experimental elementary particle physics at the institute. Her/his activities should be closely integrated into the Helmholtz-Alliance "Physics at the Tera ScaleClCo-operations with DESY, Zeuthen and the Collaborative Research Center 647 "Space-Time-Matter are desired. The successful applicant is expected to participate in the general teaching duties of the institute at the undergraduate and graduate level in the subject of theoretical physics.

Applicants have to fulfil the employment requirements for junior-professor according to Berlin University law §102a.

Humboldt University Berlin intends to increase the number of women in research and teaching and particularly encourages female scientists to apply. Applications of scientists from abroad are particularly welcome. In case of equal qualifications handicapped applicants will be favoured.

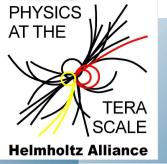
Please submit your applications including the standard documents along with a short research statement referring to opening number JP007/07 to the

Dean of the Faculty of Mathematics and Natural Sciences I, Prof. Dr. Limberg, Unter den Linden 6, D-10099 Berlin, Germany, Deadline is October 1, 2007. For further information on junior-professorships as well as on the tenure track procedure for a possible W2/W3 professorship appointment see http://forschung.hu-berlin.de/research/young_scientists/juniorprofessuren/



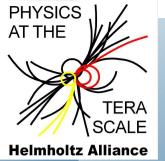
YIGs Status

- Karlsruhe S. Gieseke as of 1/1/2008
- Dresden A. Straessner as of 15/9/2008
- HU Berlin P. Uwer as of 1/11/2008
- Wuppertal W. Wagner as 1/12/2008
- Göttingen Not yet filled
- Hamburg Not yet advertised
 - Accelerator YIG
 - Lengthy discussions on direction and strategy
 - ILC developments
 - S. Kahn → Dortmund
 - Will almost certainly be reallocated to DESY



Tenure-track Positions

- Analysis Centre (DESY)
 - Head T. Schörner-Sadenius as of 1.10.2008
 - MC − Z. Nagy as of 1.9.2008
- Siegen
 - Not filled
- Wuppertal
 - M. Worek as of 1.12.2008



Fellows Advertised

- 9 Theory
- 8 Experiment
- 3 Detector
- Total 13.5 FTE financed by Alliance
- 2 committees for all positions
- Original planning was for 13 Alliance financed positions as of 2009
- Budget deficit in 2008/2009 compensated by NAF + later filling of some positions



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The Strategic Helmholtz Alliance "Physics at the Terascale" invites applications for several postdoctoral fellowships in particle physics theory, experimental particle physics and detector development. The Alliance Fellowships are intended to further the careers of individuals of outstanding potential and offer the opportunity to pursue research for a period of up to five years. Applicants must have a Ph.D. and have proved their ability as an individual and independent researcher.

Particle Physics Theory

with a focus on the research area

- Phenomenology beyond the Standard Model (in SUSY and non-SUSY theories, including also aspects of model building)
- b) Precision calculations and the development of dedicated higher-order Monte Carlo programs (Standard Model predictions, fieldtheoretical and calculational methods)
- Monte Carlo generators (multi-purpose Monte Carlo programs, including parton showering, hadronisation, etc.)

Applicants are encouraged to provide a preference list of up to three host institutes chosen from

RWTH Aachen (a, b)
University Bonn (a, c)
University Portmund (a)
University Freiburg (a, b, c)
University Hamburg (a, b)
University Karlsruhe (a, b)
University Würzburg (a, b)
University Würzburg (a, b)

where the corresponding research fields are indicated in parentheses. Applicants should arrange for two letters of recommendation to be sent to the address below. Preference will be given to applications received by 15 December 2007.

Experimental Particle Physics with a focus on analyses of data from the Large Hadron Collider LHC in the research areas

a) Precision measurements of the top quark

- b) Search for the Higgs Boson at LHC
- Search for extensions of the Standard Model such as supersymmetry or large extra dimensions
- Development of experimental analysis techniques such as high-level graphical analysis tools, statistical tools and novel techniques for detector calibration
- e) Contributions to the development of Monte Carlo generators

Applicants are invited to provide a preference list of up to three host institutes chosen from

RWTH Aachen (a, d)
DESY (a)
University Freiburg (b, c)
University Hamburg (c, d)
University Marlsruhe (c)
University Mainz (c, d)
LMU München (b, c)
University Siegen (b, e)

where the corresponding research fields are indicated in parentheses. Please give the names of two persons who can provide further information about the candidate. Closing date for applications is 31 December 2007.

Detector Development

RWTH Aachen: Research and development for the SLHC upgrade of the CMS tracker with a focus on electronics system design, in particular improved powering schemes. The fellow will work in the RWTH Aachen CMS group which played a key role in the development and construction of the CMS tracker.

University Göttingen: The fellow is expected to take a leading role in the development of modern particle physics detectors with an emphasis on the upgrade of the ATLAS pixel detector.

University Heidelberg: The Kirchhoff-Institut für Physik is seeking a research fellow to work on the upgrade of the ATLAS level-1 calorimeter trigger to cope with the conditions imposed by a possible LHC luminosity upgrade. Experience in trigger related studies is required.

Applicants are encouraged to indicate their preferred institute.

Please give the names of two persons who can provide further information about the candidate. Closing date for applications is 31 December 2007.

Applications should include a letter of application, CV, academic records as well as a list of publications and should be addressed to Prof. lan Brock (Scientific Manager of the HGF Alliance) DESY, Notkestrasse 85, D-22607 Hamburg, (lan.Brock@desy.de).

The particle theory group of the Department of Physics at the University of Siegen has an opening for a

Helmholtz Research Fellow (Tenure Track) for Particle Physics Phenomenology

We are looking for a theoretical physicist with substantial postdoctoral expertise in high-energy collider physics, in particular in the phenomenology of electroweak interactions or of new physics beyond the Standard Model. The position is funded by the Helmholtz Alliance "Physics at the Teracacia" until June 2012 and remunerated according to the TVL regulations for public sector employees. Based on an evaluation of the candidate's calmill revocative his is scheduled after three years, the position may subsequently become that of a permanent scientific employee of the University of Siegen.

The particle theory group at Siegen has interests in the areas of collider phenomenology, flavour physics, CCD and Monte Card development, between the special properties of the properties of t

Interested candidates should arrange for two letters of recommendation and submit their application including CV, list of publications, and a statement on past and future research, no later than 31 December 2007 to Prof. Ian Brock (Scientific Manager of the Helmholtz Alliance) DESY, Notkestrases 85, De2607 Hamburg, (Jan. Brock@desy.de).

For further information, please contact:

The theoretical and experimental particle physics groups at the University of Wuppertal have an opening for a

Wuppertal have an opening for a Helmholtz Research Fellow

The candidate should participate in the development and verification of Monte Carlo generators for accelerator-based high-energy physics experiments. Herbas should play a leading role in the planned Monte Carlo theoretical basis of event generators as well as the experimental applications and demands. Significant experience in the use of Monte dad generators in particle physics is required. Demonstrated collaborations with experimental as well as theoretical physicists would be very welcome.

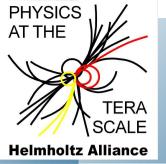
The salary will follow that of the TVL regulations for public sector employees at the level of E13. The candidate may be offered a permanent position after four years.

Interested candidates should arrange for two letters of recommendation and submit their application including CV, list of publications, and a statement on past and future research, no later than 31 December 2007 to Prof. Ian Brock (Scientific Manager of the Helmholtz Alliance) DESY, Notkerstasse 85, D-2260 F Hamburg, (lan Brock@desy.de).

For further information, please contact: Prof. Peter Mättig (peter.mattig@cern.ch) or

Prof. Robert Harlander (Robert.Harlander@physik.uni-wuppertal.de)

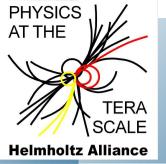
Detailed descriptions of the positions are available at http://www.terascale.de or from the Scientific Manager of the Helmholtz Alliance.



Fellows Status

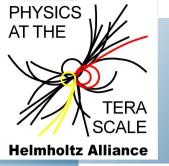
- Theory all positions filled
 - Aachen
 - Aachen/Bonn
 - Bonn
 - Dortmund
 - Freiburg (as of 1.1.2009)
 - Hamburg
 - Karlsruhe
 - Mainz
 - Würzburg

- Physics Analysis filled
 - DESY
 - Freiburg
 - Hamburg
 - Karlsruhe
 - Mainz
 - Siegen → Freiburg
- Detector filled
 - Aachen
 - Heidelberg



Grid Positions

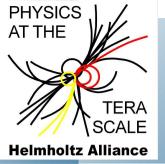
- DESY mostly filled
- FZK filled
- Aachen filled
- Freiburg being filled
- Göttingen → DESY interviewing
- Karlsruhe filled
- München filled
- Wuppertal filled as of 1.1.2009



Detector Positions

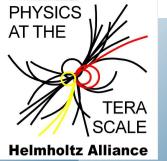
- Bonn
 - 3 engineers/physicists filled
- DESY
 - 2 engineers filled
 - Test-beam filled/covered
- Heidelberg
 - 2 positions still open

- Aachen, Hamburg, Gießen, Karlsruhe, Siegen (PhD) filled
- Technicans mostly filled
- PhDs filled or a few postponed by 1 year



Other Positions

- Accelerator
 - YIG already discussed
 - PhD positions filled
- Outreach
 - K. Voss LHC Communicator as of 1.4.2008
 - U. Bilow Master Classes as of 11.8.2008



Positions in 2009

- Just Advertised
 - DESY Statistics
 - Fellows
 - Physics Analysis
 - Aachen
 - München
 - Detector
 - Göttingen
 - Detector
 - 2 Physicists/Engineers
 - Heidelberg
 - 1 Physicist
 - Bonn
- 2 DESY positions (detector) to come



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participating ii

Scientist

The Analysis Centre of the Helmholtz Alliance "Physics at the Terascale" at DESY, Hamburg site, is seeking a scientist to join the Statistics Tools group of the centre.

The Analysis Centre supports physicists at German Institutes working on analyses at ATLAS, CMS and ILC. The contre contains three main branches: Monte Carto Generators, Parton Distribution Functions and Statistics Tools. A major goal of the statistics tools group is to provide support and education for all kinds of statistics-related tasks and questions in high-energy physics date analysis.

The successful candidate is supposed to strengthen the activities of the group by

- contributing to the development of statistics tools,
 implementing existing tools into software frameworks like ROOT,
- taking part in the organisation of meetings, workshops and schools and
- helping to provide user support and web documentation.

The candidate is also expected to carry out research within one of the Alliance projects for about 50 % of his or her time.

The position requires

- a Ph.D. in physics,
 interest and exper-
- Interest and experience in the development of statistics tools and
- programming, software maintenance and analysis experience (e. g. C++, Fortran, ROOT).

The position is initially limited until 30 June 2012, the nominal end of the Helmholtz Alliance funding period. For further information please contact Dr. Thomas Schörner-Sadenius (Thomas.Schoerner@desy.de).



Physicist

The University of Göttingen offers a full-time position for a research assistant/post-doc (salary level TVL E13) beginning as soon as possible. The position is available for an initial period of two years with a possible extension by the years.

The post-doc will be member of the recently formed particle physics group to work on the ATLAS experiment at the Large Hadron Collider at CERN. The ATLAS experiment is designed to search for physics phenomen responsible for electrowesk symmetry breaking and to study a variety of subjects related to physics at the TeV scale. The successful applicant is expected to participate in the supervision of students, in the start-up of the new particle physics group in Goltingen, in the research activities of the group and to play a leading role in detector development in the context of the Heimholtz Alliance, in particular in the ATLAS pixel detector upgrade.

For further information please contact Prof. Arnulf Quadt (aquadt@unl-goettingen.de).



Physicist "Physics Data Analysis with the CMS Experiment"

The applicant is expected to contribute to physics data analysis within the CMS experiment, and to the Visual Physics Analysis project being developed at the RWTH Aachen. The position is funded by the Helmholtz Alliance "Physics at the Terascale" for a period of 3.5 years.

For further information please contact Prof. Martin Erdmann (+49-241-8027317, erdmann@physik.rwth-aachen.de).



Physicist "Physics Data Analysis with the ATLAS Experiment"

The Faculty of Physics at LMU Munich has an immediate opening for a physicist on the search for signate of new physics beyond the Standard Model within the ATLAS experiment. The LMU ATLAS group is contributing to the muon spectrometer, Grid computing and the preparation of the data enalysis. The appointee is expected to establish a strong research programme involving diploma and Ph.D. students with particular emphasis on searches for Higgs Bosons or supersymmetric particles and to contribute actively to a successful start-up phase of the ATLAS experiment.

The position is partially funded by the Strategic Heimholtz Alliance "Physics at the Terascale" and the salary follows the standard for public employment (TVL E13). The position is vacant and initially limited to two years with the possibility of an extension. Candidates should hold a Ph.D. in excentmental particle ohysics.

For further information please contact Prof. Dorothee Schalle (dorothee schalle@physik.uni-muenchen.de).



Two Physicists/Engineers

The Heldeburgh ASIC Laboratory located in the Kirchhoff-Institut für Physik at the Ruprechk-Karb-Universität Heldeburgh will extend its social with extend its social was experienced in the support scientists and Ph.D. students in the area of analogue and mixed-signal VLSI component and system design and test. The institute openings for two Physiciats/Engineers for the design of Integrated mixed-electronics, in particular analogue and mixed-algorithms and simulation tools is required electronics, the particular analogue of state-of-the-art-design and simulation tools is required electronic as well as experience in the design and testing of complex electronic circuits estign and testing of complex electronic circuits estign and testing in experience in the design and testing of complex electronic circuits design and construction is required. Both positions are located in the existing ASIC alboratory for microsory for microsorios. They are immediately available and the low little for mill 30 June 2012.

For further information please contact Prof. Karlheinz Meier (meierk@klp.unl-heidelberg.de).

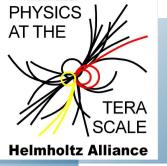
Applications (preferably by email) including a letter of application, CV, academic record as well as a list of publications and the names of three persons who can provide further information about the candidate should be addressed to:

Prof. Ian Brock (Scientific Manager of the Helmholtz Alliance)

DESY, Notkestraße 85, 22607 Hamburg, Germany (lan.Brock@desy.de).

For all positions, salary and benefits are commensurate with those of public service organisations in Germany. Handicapped persons will be given preference to other equally qualified applicants. DESY and the universities are equal opportunity, affirmative action employers and encourage applications from women.

Closing date for all applications is 31 December 2008.



Call for Proposals

- Enquiries from 2 colleagues for Alliance support in negotiations with university for a professorship
- Ask Alliance if other similar situations elsewhere



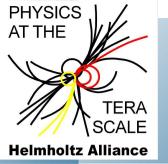
Helmholtz Alliance "Physics at the Terascale"

HA-101

Call for Proposals

Eines der erklärten Ziele der Allianz ist es, die personelle Infrastruktur bei den Partnern nachhaltig zu verbessern. Die Schaffung von 23 permanenten Stellen bei den Partnern, deren Finanzierung auch nach Ablauf der Finanzierung durch die Allianz gesichert ist, ist einer der großen Erfolge der Allianz. Im Budget der Allianz stehen im Moment noch etwa 6 Personenjahre für eine solche Unterstützung zur Verfügung. Mit diesem Aufruf möchten wir Vorschläge sammeln, in welchen Bereichen diese sechs Personenjahre sinnvoll eingesetzt werden können.

Die Vorschläge sollen bis zum 19. Dezember 2008 beim Scientific Manager (<u>ian.brock@desy.de</u>) eingereicht werden. Ausschlaggebend für einen erfolgreichen Antrag ist, dass die strategischen Ziele der Allianz verfolgt werden und dass der Antrag der Schaffung oder Erhaltung von permanenten Stellen dient.



Conclusions

- Filling positions somewhat slower than planned, but generally going very well
 - Grid and detector positions are hardest to fill
 - Investment delays often coupled with this
- Procedure to select fellows worked very well
- Institute Assembly agreed on new procedure to recover funding allocations that could not be spent
 - Should bring back some flexibility and allow us to support new initiatives: tenure-track, fellows, ...