

Curriculum vitae

Johann Christoph Bernhard (Hannes) Jung

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Personal details

Date of birth: 18. December 1955
City of birth: Offenbach/Queich (Germany)
Nationality: German

Education

2004 Appointment as docent in particle physics, University of Hamburg, Germany
1999 Appointment as docent in particle physics, University of Lund, Sweden
1989 PhD in particle physics, University of Hamburg, Germany
1983 Diploma in physics, University of Freiburg, Germany

Current position

since 2014 Group-leader of the QCD group at CMS-DESY (20 members: seniors, postdocs and PhD students)
since 2004 Senior researcher at DESY, Hamburg
since 2004 Docent in particle physics at University of Hamburg, Germany
2009 – now Guest Professor at University of Antwerp, Belgium

Previous positions

1996 – 2004 Researcher, University of Lund, Sweden
1995 – 1996 Visiting Scientist at CEA, DSM/DAPNIA, CE-Saclay, Gif-sur-Yvette, France
1994 Visiting Scientist University Paris VI, France
1994 Researcher, DESY, Hamburg
1988 – 1993 Research Associate, University of Aachen, Germany
1987 – 1988 Research Associate, DESY, Hamburg
1984 – 1987 Research Associate, University of Karlsruhe, Germany

Impact

more than 935 citable papers in peer-reviewed high-impact journals.
The h-index is 132 (<http://inspirehep.net>).

Famous papers (with citations of 250-499)

Hard diffractive scattering in high-energy ep collisions and the Monte Carlo generator RAPGAP, Comput. Phys. Commun. 86 (1995) 147.
Cited by **476 records**

Very well-known papers (with citations of 100-249)

Hadronic final state predictions from CCFM: The hadron level Monte Carlo generator CASCADE, Eur. Phys. J. C19 (2001) 351.
Cited by **248 records**

The CCFM Monte Carlo generator CASCADE, Comput. Phys. Commun. 143 (2002) 100.

Cited by **217 records**

The CCFM Monte Carlo generator CASCADE version 2.2.03, Eur. Phys. J. C70 (2010) 1237.

Cited by **123 records**

Fellowships and Awards

since 2016 Alexander von Humboldt Polish Honorary Research Fellowship by the Foundation for Polish Science (FNP) (in collaboration with the German Humboldt foundation)
2011 – 2012 Paid Associate, CERN, Geneva
2007-2009 DAAD-STINT grant (with University of Lund) on *Multi Parton Interactions and small x*

Supervision of graduate students, postdoctoral fellows and visitors

- Since 1995 Supervisor of 25 PhD and 13 diploma theses at Universities of Hamburg, Lund, Aachen, Orsay
- since 2004 Supervisor of 10 postdocs
- since 2013 Supervisor and host of postdocs from Belgium and Poland on exchange programs
- present Supervisor of the QCD group at DESY with 5 PhD students, 2 postdocs and regular visitors from GB, Iran, Poland and Russia (~ 10 persons/year)

Teaching experience

- since 2008 Lecture Courses: QCD and Monte Carlos, University of Antwerp and DESY & University of Hamburg
- 2005 – 2007 Lecture Courses: QCD and collider physics, University of Hamburg
- since 2005 Summer-student lectures on Monte Carlo simulations, DESY Hamburg
- 1998 – 2001 Lecture Courses: Cosmology and particle physics, University of Lund

Reviewer Responsibilities

- 2012 Appointed as European Research Council (ERC) external reviewer
- since 2000 Regular peer reviewer for European Journal of Physics C, Physics Letters B , JHEP

Institutional Responsibilities

- since 2016 Leader of the Standard Model Physics-Jet group (SMP-J) at the CMS experiment at CERN (ca 30 members)
- 2013 – 2015 Leader of the Monte Carlo generator group “Physics Comparison and Generator Tunes” in CMS (ca 25 members)
- 2013 - 2014 Chair of the CMS publication committee for forward physics and detector performance
- since 2012 Member of the CMS publication committee for Higgs and forward physics results
- 2010 – 2011 Leader of the “Forward Physics” analysis group in CMS
- 2007 – 2009 Leader of the Monte Carlo group at the Analysis Center of the Helmholtz Alliance “Physics at the Terascale” at DESY, Hamburg.

Membership of scientific societies

- since 2010 Member of the International Advisory Board for the LISHEP (Brazil) workshops
- 2009 - 2014 Chair of the International Advisory Board for the [MPI@LHC](#) workshops
- since 2008 Member of the International Advisory Board for the [MPI@LHC](#) workshops
- 2008 – 2012 Member for the Scientific Committee at DESY
- since 2007 Member of International Advisory Committee for International Symposium on Multi-particle Dynamics (ISMD)
- since 2007 Member of International Advisory Committee for International Conference on Elastic and Diffractive Scattering (Blois Workshop)

Organization of international conferences and editorial activities

- since 2013 Co-chair and editor of the TMD-workshops (Antwerp, Amsterdam, Hamburg, Antwerpen)
- 2012 Chair and editor of the workshop “[MPI@LHC](#)” (CERN, Geneva)
- 2011 Chair and editor of the workshop “[MPI@LHC](#)” (DESY, Hamburg)
- 2008 - 2009 Chair of Monte Carlo school of Terascale Alliance (DESY, Hamburg)
- 2008 Chair and editor of the workshop “International Symposium on multiparton dynamics ” ISMD08 (DESY, Hamburg)
- 2007 Chair and editor of the workshop “Elastic and diffractive scattering - forward physics and QCD (DESY, Hamburg)
- 2003 – 2008 Initiator, chair and editor of the workshop “HERA and the LHC ” (CERN and DESY) (with more than 150 regular participants over 5 years)
- 2002 – 2004 Editor of Proceedings of ”Small x Lund workshops” (Eur. Phys.J. C25 (2002) 77, Eur. Phys. J. C35 (2004) 67, Eur. Phys. J. C48 (2006) 53)

Major Collaborations

since 2008	MCnet network (http://www.montecarlonet.org) (via the node in Lund, Sweden)
since 2007	CMS collaboration (experiment at the LHC, CERN, Geneva)
since 1987	H1 Collaboration (experiment at HERA, DESY, Hamburg)
since 1984	CELLO Collaboration (experiment at PETRA, DESY, Hamburg)
1982 - 1984	EMC/NMC Collaboration (experiment at SPS, CERN, Geneva)

Summary of my achievements

I am expert in Monte Carlo techniques, since 2005 I am giving lectures on Monte Carlo techniques and QCD at the University of Antwerp and Hamburg. I have developed and maintained Monte Carlo event generators which are used in large particle physics collaborations. I wrote the first Monte Carlo event generator (RAPGAP) to simulate hard diffractive events, which were observed at HERA (DESY). This event generator was further developed to become the main MC generator for deep-inelastic scattering at HERA, including all standard (non-diffractive) processes. The citation index of 476 citations of the manual is a clear indication of this. In 2001 I published the first Monte Carlo event generator (CASCADE) based on TMDs (in the high-energy limit un-integrated gluon distributions), which was then applied to HERA as well as Tevatron and later LHC measurements. The CASCADE manuals have in total 339 citations. CASCADE is part of the standard CMS and ATLAS software packages, and comparison with predictions are included in collaboration publications.

I have supervised 25 PhD thesis, among which 3 were in the field of Monte Carlo generators, in 2015 two of my PhD students graded with the highest distinction (summa-cum-laude) at Hamburg University. One of my PhD students published his thesis in the Springer Theses Series. I had 10 postdocs in my group and have been very successful to promote them for further high level positions, some of them holding leading positions in science and education and others in start-up enterprises, finance sector and industry. At present I am supervising 5 PhD students, one working on TMD determination, the others on experimental topics, as well as 2 postdocs.

I am convener of CMS physics groups. From 2013-2015 I lead the CMS Monte Carlo group “Physics Comparison and Generator Tunes”, which is concerned about the global description of measurements at the LHC as well as providing new parameter sets (tunes) for the standard Monte Carlo event generators for the best description of LHC data. The results are now the basis for the whole CMS Monte Carlo simulation, which is used in cross section measurements but also important in all searches. Under my guidance we published a paper on tunes within the CMS collaboration (Eur. Phys. J. C 76 (2016) 155), which is the first CMS paper on generator tunes and serves as a benchmark and legacy reference for results from LHC run1.

I am leader of the DESY QCD group of ~20 scientists. This group is well embedded in the general CMS physics program; alone from the group of PhD students and postdocs I am supervising, more than 10 CMS publications were released since 2011.

I have excellent collaborations with theorists: I was initiator of the Lund Small x workshop series (with more than 350 citations for the proceedings). The HERA-LHC workshops (with more than 370 citations for the proceedings) had more than 150 participants and was running over 5 years. The HERA-LHC workshops were also a basis for the participation of DESY in LHC experiments. More than 50 publications in phenomenology (both on HERA and LHC physics) I have written together with theorists. Due to my experience in both phenomenology and experiment, I became a respected expert and translator between experimentalists and theorists, and therefore was chosen by the CMS collaboration board as the chair of the committee “Theorists in CMS” to motivate theorists to join CMS.

In 2016 I won the award of a “Humboldt research scholarship” from the Foundation of Polish Science (FNP) in collaboration with the German Humboldt society. The peer-reviewed award was given on the topic of TMD evolution and Monte Carlo generators. This scholarship of 6 month already lead to the idea of combining automated hard process calculations with TMD parton densities.