

Volker Beckmann



CNRS / IN2P3

Curriculum Vitae

February 20, 2019

Objective:

To enable scientific work through my management and scientific skills based on my experience in international working environments.

Personal Information

Name: **Volker BECKMANN**
 Citizenship: German and French
 Present Position: Scientific director for computing and data science
 at the French National Center for Scientific Research
 (CNRS / IN2P3)
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Education

- 2010 *Habilitation à diriger des recherches* (the highest degree achievable in the French system) at Université Paris Diderot. Thesis title: *Unification of Active Galactic Nuclei at X-rays and soft gamma-rays*. Referees: Prof. Dr. Pierre Binétruy, Prof. Dr. Peter von Ballmoos, Prof. Dr. Chris Done, Dr. Catherine Boisson.
 Defended on September 10, 2010.
- 1996/2001 PhD at University of Hamburg, Hamburger Sternwarte in Astrophysics. Thesis title: *Evolutionary behaviour of AGN - investigations on BL Lac objects and Seyfert II galaxies*. Referees: Prof. Dr. Dieter Reimers (Hamburger Sternwarte), and Prof. Dr. Laura Maraschi (Osservatorio Astronomico di Brera).
 PhD defended on January 12, 2001. Grade: *magna cum laude*
- 1993/96 *Diplom* (\approx Master) in Physics at the University of Hamburg. Thesis: *X-ray spectral index of RASS-AGN*. Referees: Prof. Dr. Sjur Refsdal and Prof. Dr. Dieter Reimers (Hamburger Sternwarte). Grade: *cum laude*
- 1989/93 *Vordiplom* (\approx Bachelor) in Physics at the University of Hamburg

Work history

- since May 2016 Scientific director at the Institute of Nuclear and Particle Physics of the French National Center for Scientific Research (CNRS / IN2P3) for the domain computing and data science. Responsible for the aspects concerning computing of the 22 laboratories of IN2P3 with ~ 3, 200 colleagues.
- Sept. 2009 - April 2016 Researcher CNRS, working for the APC laboratory (Université Paris Diderot). Project scientist of the François Arago Centre (FACe), a data and computing centre for space- and ground-based astroparticle physics. *Euclid* and *SVOM/ECLAIRs* data processing project manager at APC. PhD and master student supervisor.
- April 2007 - Aug. 2009 Collaborateur Scientifique of the University of Geneva, working at the ISDC Data Centre for Astrophysics. Operations coordinator and instrument specialist for the spectrograph SPI of the *INTEGRAL* mission at the ISDC. July 2007 until August 2009 also *INTEGRAL* project manager. Re-organisation of the workforce within the *INTEGRAL* operations at ISDC.
- Oct. 2003 - March 2007 Working as a Research Associate for UMBC at NASA/Goddard Space Flight Center. Since July 2006 head of the *INTEGRAL* guest observer facility at NASA. Support of guest investigators, preparation and administration of *INTEGRAL* budget, analysis and interpretation of *INTEGRAL* data, building and maintaining the *INTEGRAL*/HEASARC archive. Since August 2006 Assistant Research Professor at UMBC.
- Feb. 2001 – Sep. 2003 Working for the IAAT (University of Tübingen) at the ISDC. Developing and integrating analysis software for *INTEGRAL*, support of operations of the *INTEGRAL* satellite. Instrument specialist for the *INTEGRAL*/SPI spectrometer.
- May – July 2000 Working at the *Osservatorio Astronomico di Brera* in Milan, financed by an Italian grant (CNR).
- Apr.-Sep. 1999 Working at the *Osservatorio Astronomico di Brera*, financed by the Deutsche Akademische Austauschdienst (DAAD). Data analysis of *BeppoSAX* satellite spectra.
- 1996 – 2000 Scientific assistant researcher at the Hamburger Sternwarte, financed by the Deutsche Forschungsgemeinschaft (DFG). Data analysis for the Hamburg/ESO Quasar Survey; preparation, execution, and analysis of optical observation runs at several telescope sites.

Experience and achievements

Teaching experience

I taught the topic of "Active Galactic Nuclei" as invited lecturer at the Cargèse school 2013 on "Cosmic Accelerators". In 2016 I was again invited to deliver the lecture on "Active Galactic Nuclei" at the Cargèse school on "Astrophysical Jets".

The University of Maryland Baltimore County (UMBC) gave me the opportunity to teach undergraduate courses, one semester on "Stellar Astrophysics", and one on "Extragalactic Astronomy and Cosmology". The teaching included the design of the course, development of the course structure and topics to be covered. Each course consisted of 30 lectures, weekly homework assignments including correction and evaluation of the students' work (as no teaching assistant was assigned to me), 3 exams (two midterm and one final exam) in each course, and the final grading. In addition, this included open office hours, providing advice and support to students. See the courses' websites under:

<http://asd.gsfc.nasa.gov/Volker.Beckmann/edu/index.html>

<http://www.apc.univ-paris7.fr/~beckmann/physics316/index.html>

Supervising experience

Supervision or co-supervision of 20 students (among which 5 PhD students).

Publications

About 310 publications in total with ~ 4400 citations. H-index: 31

- 77 publications in international refereed journals, including 17 as lead author
- 35 publications in international refereed conference proceedings including 10 as lead author.
- 31 publications in non-refereed conference proceedings including 12 as lead author.
- Text book: Beckmann & Shrader, "Active Galactic Nuclei", Wiley-VCH, August 2012.
- 94 Astronomer's Telegrams including 3 as lead author.
- 36 GRB Circular Network (GCN) reports including 7 as lead author.

Conferences, seminars, and oral communications

- 35 talks in international conferences of which 4 were invited review talks.
- 25 poster presentations at international conferences.
- ca. 150 seminars given in various institutions around the world.

Research Grants and Fellowships

year	amount	source
2016	17,800 Euros	CNRS / MASTODONS program
2016	15,000 Euros	CNRS/PNHE grant to organise the Cargèse school on Astrophysical Jets
2015	5,000 Euros	CNRS/PNHE grant to organise workshops on SVOM related activities
2013	5,000 Euros	Grant to organise a seminar series on the topic of challenges in data treatment for space missions.
2011	450,000 Euros	responsible for the valorisation aspect of the ~ 8 MEuro <i>UnivEarthS</i> project (French LabEx program)
2010	ca. 100,000 Euros	Grant of the Ecole Doctorale Paris for a 3 year PhD position.
2008	8,000,000 CHF	4-year budget for the ISDC, for which I was responsible as a member of the management team. Co-I
2007	2,300 \$	NASA/NHSC, P.I.
2007	9,794 \$	NASA/Chandra AO-8, P.I.
2006	57,000 \$	NASA/INTEGRAL AO-4, P.I.
2005	12,310 \$	NASA/INTEGRAL AO-3, P.I.
2005	60,000 Euros	Astrophysical Spring School, grants from various organisations
2004	7,686 \$	NASA/INTEGRAL AO-2, P.I.
2004	13,000 \$	NASA/RXTE Cycle 9, P.I.
2000	3,000,000 Lira	CNR (Italy) research grant to work in Milano, P.I.
1999	7,500 DM	DAAD (Germany) fellowship to work in Milano, P.I.

Experience in space based observational astrophysics

Successful observation proposals for *ROSAT*, *BeppoSAX*, *XMM-Newton*, *Chandra*, *Swift*, *INTEGRAL*, and *AGILE*. In addition, experience with the usage of data from *HST*, *Fermi*, *NuSTAR*, *RHESSI*, *CGRO*, and *RXTE*. Active in mission preparation for *Euclid*, *SVOM*, *Athena*, *LISA-Pathfinder*, and *eLISA*.

Experience in ground based observational astrophysics

About 20 observation runs at optical and infrared telescopes, performing spectroscopy, multi-object spectroscopy, imaging, and photometry. Telescopes used include Calar Alto (CA) 3.5m, CA 2m, CA 1.2m, CA Schmidt telescope, and the Hamburg 1m Oskar-Lühning-Telescope on the northern hemisphere. On the southern hemisphere I worked at La Silla at the NTT, the 1.54m Danish telescope, and the 90cm Dutch telescope.

Refereeing and Committees

I have been a referee to evaluate research projects and colleagues for the Agence Nationale de la Recherche (ANR), for the European Marie-Curie Fellowship program, for the Swiss National Science Foundation, for the ETH Zürich and for the EPFL in Lausanne, for the South African National Science Foundation, for the Swedish Knut and Alice Wallenberg Foundation, for the Dutch LEaDing Fellows Programme, and for the Georgia National Science Foundation. I have been a member of the *INTEGRAL* Time Allocation Committee (2007-2009 and 2012/2013) and was a member of the *Fermi* review panel for several years. I was also a member of the “Conseil scientifique du Campus Spatial” at Université Paris Diderot, and served on ESA’s Payload Review Committee for an M-class mission. Since 2015 I am a member of the *INTEGRAL Users Group*, ESA’s scientific steering committee of the *INTEGRAL* mission.

Since May 2017 I am member of of the Large Hadron Collider Experiments Committee (LHCC), and since 2019 I am chief reviewer for the world-wide LHC computing (WLCG). The LHCC Committee follows the development of the experimental programme for LHC and monitors the progress of approved experiments. Also since May 2017 I am chair of the EU-T0 Consortium Board. EU-T0 is a consortium of funding agencies and organisations which between them fund and provide very large scale computing and data processing resources for a set of scientific communities which already have Exabyte scale requirements. Since 2018 I am a member of the External Computing Committee of the European Gravitational Observatory (EGO), which is operating the Virgo observatory.

In addition, I am a referee for the *Astrophysical Journal*, *Astronomy & Astrophysics*, *Monthly Notices of the Royal Astronomical Society*, *Advances in Space Research*, *Experimental Astronomy*, and for *Astrophysics and Space Science*. Since 2017 I am editor-in-chief of the journal “*Computing and Software for Big Science*” (Springer).

Conference and meeting organisation

- I am co-organiser of the school on “Cosmic Explosions” that will take place in Cargèse (Corsica) in May/June 2019.
- I was the main scientific organiser for a Focus Meeting on radio galaxies at the IAU General Assembly in 2018 in Vienna.

- For the 41st COSPAR Assembly in Istanbul in August 2016 I was the main scientific organiser for a 3 half-day session on radio galaxies (unfortunately, this COSPAR assembly has been cancelled).
- In 2016 I was co-organiser of the Cargèse 2016 school on “Astrophysical Jets”, giving the lectures on Active Galactic Nuclei.
- From 2013 to 2015 I was co-organising the weekly high-energy group meeting at APC
- I was co-organiser of a school in Cargèse in 2013 on “Cosmic Accelerators”, with 65 attending PhD students and young post-Docs, 15 international experts, and gave here the lecture on Active Galactic Nuclei.
- For the 40th COSPAR Assembly in Moscow in July 2014 I was deputy scientific organiser of a 3 half-day session on compact objects.
- I was part of the local organising committee of the 10th INTEGRAL workshop which took place in October 2012 in Paris.
- For the 39th COSPAR Scientific Assembly in Mysore (India) in July 2012 I was the main scientific organiser of a 3 half-day session on Seyfert galaxies.
- Together with Jérôme Rodriguez (CEA/Saclay) I organised the 2006 “school” on high-energy astrophysics entitled “Observing the X- and Gamma-ray Sky” in Cargèse (Corsica). 22 internationally renowned experts on the field gave lectures during this two week event in April 2006 to 67 PhD students and young post-Docs. The school topics covered most of the physics relevant for X-ray astronomy, from Galactic to extragalactic objects, through their radiation processes, their temporal behaviour, and our actual understanding of these objects. The attendees had the opportunity to give short presentations about their own research or topics related to the aim of the school.

Public Outreach

- 2016 Educator at the second Massive Open Online Course (MOOC) on gravitation, cosmology, and black holes
- 2015 Educator at the first Massive Open Online Course (MOOC) on gravitation, cosmology, and black holes
- 2007 – 2009 Public outreach activities for the ISDC Data Centre for Astrophysics. Close collaboration with the *Collège du Léman*.
- 2003 – 2007 Public talks in the US on popular astrophysical topics, like space based astronomy, neutron stars and black holes, etc.
- 2001 – 2003 Supporting public events at the ISDC. This included visits of school classes at the ISDC to whom we would introduce the techniques and science of *INTEGRAL*.
- 1998 – 2000 Press related work for the Hamburger Sternwarte. Here I was responsible to work with print media, radio and television. This resulted in frequent appearance of the observatory in the news, and in several features about our work on local radio stations as well as on local and nation-wide television.
- 1998 – 2000 Together with high-schools we organised practical days for school classes at the observatory. This also included lectures given in schools.
- 1996 – 1999 Organisation of public outreach work at the Hamburger Sternwarte.
This included the monthly open-telescope-nights, talks about astronomical topics to the public, and guided tours of the observatory.

Press releases

Several results of my work were featured in press releases by ESA, NASA, UMBC, and the Université de Genève. For a full list see

http://www.apc.univ-paris7.fr/~beckmann/english/e_press.htm

Language skills

- German (native speaker)
- English (fluent)
- French (advanced)
- Italian (advanced)

Selected publications

Veynante, Bidoit, Dayde, et al. 2018, "Livre Blanc sur les données au CNRS: Etat des lieux et pratiques", MICADO / CNRS publication

Berghöfer, Agrafioti, Allen, Beckmann, et al. 2015, "Towards a Model for Computing in European Astroparticle Physics", White Paper, APPEC / DESY

Beckmann & Shrader, 2012, "Active Galactic Nuclei", Wiley-VCH, 380 pages

Beckmann, Jean, Lubinski, Soldi, & Terrier 2011, "The Hard X-ray Emission of Cen A", *Astronomy & Astrophysics*, 531, 70

Beckmann, Soldi, Ricci, et al. 2009, "The Second INTEGRAL AGN Catalogue", *Astronomy & Astrophysics* 505, 417

Beckmann, Barthelmy, Courvoisier, et al. 2007, "Hard X-ray Variability of AGN", *Astronomy & Astrophysics*, 475, 827

Beckmann, Soldi, Shrader, Gehrels, Produit 2006, "The Hard X-ray 20-40 keV AGN Luminosity Function", *Astrophysical Journal*, 652, 126

Beckmann, Engels, Bade, Wucknitz, 2003, "The HRX-BL Lac sample - unification of HBLs and LBLs", *Astronomy & Astrophysics*, 401, 924