

# Curriculum Vitae

## Personal Data

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Name: Dieter Vollhardt

Date and Place of Birth: September 8, 1951, in Bad Godesberg

Nationality: German

Marital Status: Married to Dr. med. Jutta Muttonhammer,  
one child: Hilbert Matthias

Present Position: Professor, Chair in Theoretical Physics  
Center for Electronic Correlations and Magnetism  
Institute of Physics, University of Augsburg

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## Education

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1958 - 1962 Grammar School, Hamburg

1962 - 1969 Gymnasium Blankenese (up to 12<sup>th</sup> grade), Hamburg

1969 - 1971 United World College of the Atlantic,  
St. Donat's Castle, Wales, UK

1971 Passed the following examinations:  
- Advanced Level Examinations (UK)  
- International Baccalaureate  
- Scholastic Aptitude Tests (USA)  
- German Abitur

## Professional Career

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1971 - 1975	Study of Physics at the University of Hamburg
1975 - 1976	Research with Prof. L. Tewordt at the University of Hamburg
1976 - 1977	Research with Prof. K. Maki at the University of Southern California, Los Angeles, USA
November 1977	Diplom Degree ( <i>Dipl.-Phys.</i> ), University of Hamburg Thesis on "Massen-Supraströme im suprafluiden $^3\text{He}$ " Advisors: Prof. Dr. K. Maki (University of Southern California, Los Angeles, USA) and Prof. Dr. L. Tewordt (University of Hamburg)
1977 - 1979	Research with Prof. K. Maki at the University of Southern California, Los Angeles, USA
August 1978	Doctoral Degree ( <i>Dr. rer. nat.</i> ), University of Hamburg; Thesis on "Stability of Superflow and Related Textural Transformations in Superfluid $^3\text{He-A}$ " Advisors: Prof. Dr. K. Maki (University of Southern California, Los Angeles, USA) and Prof. Dr. L. Tewordt (University of Hamburg)
1979 - 1984	Postdoctoral Research Associate at the Max Planck Institute for Physics and Astrophysics (Werner Heisenberg Institute), Munich, Germany; Advisor: Prof. Dr. P. Wölfle
December 1984	Habilitation ( <i>Dr. rer. nat. habil.</i> ), Technical University of Munich; Thesis on „Theoretische Untersuchungen korrelierter Fermisysteme: Flüssiges $^3\text{He}$ und ungeordnete Metalle“
1984 - 1987	Heisenberg-Fellow of the Deutsche Forschungsgemeinschaft at the Max Planck Institute for Physics and Astrophysics (Werner Heisenberg Institute), Munich, Germany
1987 - 1996	Professor, Chair in Theoretical Physics, Director at the Institute for Theoretical Physics, Rheinisch-Westfälische Technische Hochschule Aachen (RWTH Aachen University)
Since 1996	Professor, Chair in Theoretical Physics Center for Electronic Correlations and Magnetism, Institute of Physics, University of Augsburg

## Offers for Professorships

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April 1986	C2-Professorship for Theoretical Physics (tenured) Technische Universität München August 1986: Offer declined
July 1986	C4-Professorship (Chair) for Theoretical Physics (tenured) Rheinisch-Westfälische Technische Hochschule Aachen (RWTH Aachen University) January 1987: Offer accepted
September 1995	C4-Professorship (Chair) for Theoretical Physics (tenured) University of Augsburg February 1996: Offer accepted

## Research Stays and Sabbaticals

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AT&T Bell Laboratories, Murray Hill, USA	September – October 1983,
Research Center (Kernforschungsanlage) Jülich	March 1985
Institute for Theoretical Physics, Santa Barbara, USA	November – December 1983, February – March 1989 March – April 1996 July – August 2002
University of Florida, Gainesville, USA	October – December 1986, September 1991 – February 1992
Aspen Center for Physics, Aspen, USA	July/August 1981, 1985, 1987, 1991, 1992, 1994, 1997, 1998, 2001, 2003, 2008

## Memberships

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- German Physical Society
- American Physical Society

## Awards

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### Scholarships and Fellowships

- 1969 – 1979 German National Academic Foundation (Studienstiftung des Deutschen Volkes):
- 1969 – 1971: Scholarship for the United World College of the Atlantic, Wales, UK
  - 1972 – 1976: Scholarship for the Study of Physics at the University of Hamburg
  - 1976 – 1977: Scholarship for Research at the University of Southern California, Los Angeles, USA
  - 1978 – 1979: Dissertation Scholarship for Research at the University of Southern California, Los Angeles, USA
- 1984 – 1987 Heisenberg-Fellowship of the Deutsche Forschungsgemeinschaft

### Prizes

- 2006 Europhysics Prize of the European Physical Society  
*For the development and application of the dynamical mean-field theory*  
(together with A. Georges, G. Kotliar, W. Metzner)
- 2010 Max Planck Medal 2010 of the German Physical Society  
*In recognition of his significant contributions to the derivation of a new mean-field theory of correlated quantum systems and to the understanding of many-body problems in the quantum theory of condensed matter*
- 2011 Ernst Mach Honorary Medal der Academy of Sciences of the Czech Republic  
*For Merit in the Physical Sciences*

### Other Honors

- 2001 Ehrenfest Lecture (Colloquium Ehrenfestii), University of Leiden
- 2011 Election to the Bavarian Academy of Sciences and Humanities
- 2011 Dvorak Lecture, Institute of Physics of the Academy of Sciences of the Czech Republic, Prague
- 2012 Einstein Lecture, Annalen der Physik
- 2016 Lecture at the Zhong-Guan-Cun Forum on Condensed Matter Physics, Institute of Physics, Chinese Academy of Sciences, Beijing
- 2016 Lecture of Outstanding International Scientists, University of Science and Technology of China, Hefei
- 2016 Distinguished Speaker, Qiu-Shi Forum in Natural Sciences, Zhejiang University, Hangzhou, China

## Thesis and Postdoctoral Advisees (Excerpt)

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Nils Blümer	Diplom 1996, Doctoral Degree 2002; Head of Computer Center, (U Eichstätt-Ingoldstadt, Germany)
Christoph Bruder	Diplom 1985; Professor (U Basel, Switzerland)
Ralf Bulla	Postdoc 1999–2007, Habilitation 2000; Privatdozent (U Cologne, Germany)
Krzysztof Byczuk	Postdoc 2000–2002, 2005–2008; Professor (U Warsaw, Poland)
Prabudda Chakraborty	Postdoc 2008–2011; Professor (Indian Statistical Institute, Chennai, India)
Theo Costi	Postdoc 1998–1999; Senior Researcher (Forschungszentrum Jülich, Germany)
Martin Eckstein	Diplom 2006, Doctoral Degree 2009; Professor (U Nürnberg-Erlangen, Germany)
Peter van Dongen	Postdoc 1987–2000, Habilitation 1995; Professor (U Mainz, Germany)
Florian Gebhard	Diplom 1987, Doctoral Degree 1990; Professor (U Marburg, Germany)
Zsolt Gulácsi	Postdoc 1991–1992; Professor (U Debrecen, Hungary)
Karsten Held	Diplom 1995, Doctoral Degree 1999, Postdoc 1999–2000; Professor (TU Vienna, Austria)
Walter Hofstetter	Doctoral Degree 2000; Postdoc 2000–2001; Professor (U Frankfurt, Germany)
Vaclav Janiš	Postdoc 1990–1994; Professor (Charles U, Prague, Czech Republic)
Anna Kauch	Postdoc 2008–2011; Researcher (TU Vienna, Austria)
Stefan Kehrein	Postdoc 1996–2005, Habilitation 2001; Professor (U Göttingen, Germany)
Marcus Kollar	Doctoral Degree 1998, Postdoc 1998–2004, Habilitation 2014; Privatdozent (U Augsburg, Germany)
Hiroshi Kontani	Postdoc 1999–2000; Professor (Nagoya U, Japan)
Jan Kuneš	Postdoc 2006–2009; Professor (TU Vienna, Austria)
Ivan Leonov	Doctoral Degree 2006; Researcher (U Augsburg, Germany)
Walter Metzner	Diplom 1987, Doctoral Degree 1989, Postdoc 1989–1990, 1994–1996, Habilitation 1995; Director (MPI for Solid State Research, Stuttgart) and Honorar-Professor (U Stuttgart, Germany)
Thomas Pruschke	Postdoc 2001–2003; Professor (U Göttingen, Germany) , † 2016
Xinguo Ren	Doctoral Degree 2006; Professor (U Hefei, China)
Jan Schlipf	Doctoral Degree 1998; Managing Director of Gesellschaft für Industrieforschung mbH (GIF)
Rainer Strack	Diplom 1990, Doctoral Degree 1993; Managing Director BCG and Honorar-Professor (U Witten Herdecke, Germany)
Ning-Hua Tong	Postdoc 2002–2004; Professor (Renmin U, China)
Sabine Tornow	Postdoc 2003–2007; Professor (U Applied Sciences, Munich, Germany)
Götz Uhrig	Doctoral Degree 1994; Professor (U Dortmund, Germany)
Martin Ulmke	Postdoc 1996–1998; Senior Researcher (Fraunhofer FKIE, Germany)
Ruud Vlaming	Doctoral Degree 1993; Beta Research BV (Netherlands)
Matthias Vojta	Postdoc 2000–2002, Habilitation 2002; Professor (TU Dresden, Germany)
Unjong Yu	Postdoc 2006–2008; Professor (GIST, Gwangju, Korea)

## **Participation in Coordinated Programs of the Deutsche Forschungsgemeinschaft (DFG)**

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1989 – 1996	Founding Member and Member of the Board of Delegates of the Collaborative Research Center (SFB) 341 “Physics of Mesoscopic and Low-Dimensional Metallic Systems” (Köln, Aachen, Jülich)
2000 – 2009	Spokesman of the Collaborative Research Center (SFB) 484 “Cooperative Phenomena in Solids: Metal-Insulator-Transitions and Ordering of Microscopic Degrees of Freedom” (Augsburg)
Since 2010	Founding Member, Member of the Steering Committee, and Spokesman (from May 2011 to April 2012) of the Transregional Collaborative Research Center TRR 80 “From Electronic Correlations to Functionality” (Augsburg, Munich)
Since 2010	Spokesman of the Research Unit FOR 1346, “Dynamical Mean-Field Approach with Predictive Power for Strongly Correlated Materials”
Since 2015	Principal Investigator in the Sino-German Cooperation on “Emergent Correlated Materials”

## **Functions within the Scientific Self-Governance at the University of Augsburg**

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Since 2007	Member of the Executive Board of the Augsburg Center for Innovative Technologies (ACIT)
2008 – 2015	Member of the Peer Review Committee of the Faculty of Mathematics and Natural Sciences (since 2014: Faculty of Mathematics, Natural Sciences, and Materials Engineering)
2009 – 2012	Member of the Faculty Council (Fakultätsrat) of the Faculty of Mathematics and Natural Sciences
2010 – 2011	Managing Director of the Institute of Physics
2011 – 2013	Vice-Dean of the Faculty of Mathematics and Natural Sciences
2013 – 2015	Dean of the Faculty of Mathematics and Natural Sciences (since 2014: Faculty of Mathematics, Natural Sciences, and Materials Engineering)
2014 – 2015	Chairman of the Doctoral Committee of the Faculty of Mathematics, Natural Sciences, and Materials Engineering
Since 2012	Member of the Commission of Inquiry in Cases of Suspected Scientific Misconduct

## Services to the Scientific Community

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1994 – 1999	Member of the Editorial Board of <i>Superconductivity Review</i>
1996 – 1998	Divisional Associate Editor of <i>Physical Review Letters</i>
1997 – 2001	Member of the Board of Curators of <i>Physikalische Blätter</i> , the Journal of the German Physical Society
1998 and 2001	Member of the Review Panel of the Dutch Foundation for Fundamental Research for the program “Strongly Interacting Condensed Matter”
1999 - 2005	German Representative in Commission C5 (Low Temperatures) of the International Union of Pure and Applied Physics (IUPAP)
1999 - 2005	Associate Member of Commission C5 (Low Temperatures) in Commission C9 (Magnetism) of the IUPAP
2000 – 2004	Elected Referee („Fachgutachter“) for Condensed Matter Physics for the Deutsche Forschungsgemeinschaft
2000 – 2012	Member of the Scientific Council of the Max Planck Institute for Chemical Physics of Solids, Dresden
2001 - 2003	German Representative in the Scientific Council of the European Center for Atomic and Molecular Calculations (CECAM)
2002 – 2013	Member of the Review Panel of the Swiss National Science Foundation for the National Centre of Competence in Research on “Materials with Novel Electronic Properties – Basic Science and Applications”
December 2002	Chairman of the Review Committee for the evaluation of the Minerva Einstein Center for Theoretical Physics at the Weizmann Institute, Israel
2004 – 2008	Spokesman of the Review Board “Condensed Matter Physics” of the Deutsche Forschungsgemeinschaft
2004 – 2015	Member of the Commission for Low Temperature Research of the Bavarian Academy of Sciences and Humanities
April 2004	Member of the Review Panel evaluating the Program “Condensed Matter Physics” of the Helmholtz Association
January 2005	Member of the Review Panel evaluating the Department of Physics-Astronomy of the University of Bonn
2008 – 2014	Member of the Binational Prize Committee of the German Physical Society
January 2009	Member of the Review Panel for the Program “Fundamentals of Future Information Technology” of the Helmholtz Association
2012 – 2015	Chairman of the Commission for Low Temperature Research of the Bavarian Academy of Sciences and Humanities

2013 – 2015	Member of the Scientific Advisory Board of the Bavarian State Ministry of Education, Science and the Arts at the Bavarian Academy of Sciences and Humanities [After the new by-laws of the Bavarian Academy of Sciences and Humanities came into effect in October 2015 the Scientific Advisory Board was dissolved]
Since 2008	Member of the Editorial Board of <i>Lecture Notes in Physics</i> (Springer)
Since 2013	Chairman of the Prize Committee for the Max-Planck Medal of the German Physical Society
Since 2013	Member of the Scientific Advisory Board of the Wilhelm and Else Heraeus Foundation
Since 2016	Chairman of the Scientific Advisory Board of the Walther-Meißner-Institute for Low Temperature Research of the Bavarian Academy of Sciences and Humanities
Since 2016	Member of the Scientific Advisory Board of the Center for Correlated Matter, Hangzhou, China

## Conference Organization

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- Status-Seminar and Workshop on *Electronic Correlations and Magnetism*, University of Augsburg, March 3 – 4, 1997 (together with K. Samwer)
- Workshop on *Progress in the Development and Application of the Dynamical Mean Field Theory*, University of Augsburg, June 3 – 5, 1998 (together with P. van Dongen and T. Pruschke)
- International Workshop on *Ordering Phenomena in Transition Metal Oxides*, Monastery Irsee, October 7 – 10, 2001 (together mit R. Claessen, A. Kampf, A. Loidl)
- Symposium on *Theoretical Modeling of Materials with Correlated Electrons*, Spring Meeting of the Deutsche Physikalische Gesellschaft, Regensburg, March 11 – 12, 2004 (together with K. Held)
- 2<sup>nd</sup> International Workshop on *Ordering Phenomena in Transition Metal Oxides*, Wildbad Kreuth, September 26 – 29, 2004 (together with S. Horn, T. Kopp, A. Loidl, W. Scherer)
- School and Conference on *Dynamical Mean-Field Theory for Correlated Electrons: Applications to Real Materials, Extensions and Perspectives*, International Center for Theoretical Physics, Trieste, Italy, July 25 – August 3, 2005 (together with V. I. Anisimov)
- 3<sup>rd</sup> International Workshop on *Ordering Phenomena in Transition Metal Oxides*, University of Augsburg, October 5 – 8, 2008 (together with W. Brütting, U. Eckern, A. Loidl, A. Reller)



- Autumn School *Hands-on LDA+DMFT*,  
Forschungszentrum Jülich, Jülich, October 4 – 7, 2011  
(together with E. Pavarini, E. Koch, A. Lichtenstein)
- International Workshop on *Dynamical Mean-Field Approaches for Strongly Correlated Materials*,  
Max Planck Institute for the Chemical Physics of Solids, Dresden, September 25 – 28, 2012  
(together with M. Haverkort, A. Lichtenstein, L. H. Tjeng)
- Focus Session on *Dynamical Mean-Field Approach to Correlated Electron Materials*,  
Spring Meeting of the Deutsche Physikalische Gesellschaft, Regensburg, March 14, 2013  
(together with R. Claessen, E. Pavarini)
- Autumn School on Correlated Electrons *DMFT at 25: Infinite Dimensions*,  
Forschungszentrum Jülich, September 15 – 19, 2014  
(together with E. Pavarini, E. Koch, A. Lichtenstein)
- 2<sup>nd</sup> International Workshop on *Dynamical Mean-Field Approaches for Strongly Correlated Materials*,  
Max Planck Institute for the Chemical Physics of Solids, Dresden, September 28 – October 2, 2015  
(together with M. Haverkort, A. Lichtenstein, L. H. Tjeng)
- International Workshop on *Martin Gutzwiller's Scientific Universe: From Wavefunctions over periodic Orbits to Sun, Moon and Earth*  
Max Planck Institute for the Physics of Complex Systems, Dresden, October 28 – 31, 2015  
(together with J.-M. Rost, S. L. Tomsovic)
- Focus Session *Realistic Dynamical Mean-Field Approaches to Correlated Quantum Materials*,  
Spring Meeting of the Deutsche Physikalische Gesellschaft, Regensburg, March 9, 2016,  
(together with R. Valenti)
- International Workshop *From Electronic Correlations to Functionality*, Kloster Irsee, September 12 – 15, 2016  
(together with P. Böni, A. Loidl)

## Editorship of Scientific Publications

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- Proceedings of the Euroconference on *Correlations in Unconventional Quantum Liquids*  
Dedicated to the memory of Rudolf Peierls, Z. Phys. B, Vol. **103**, No. 2, 1997  
(together with D. Baeriswyl and J. Carmelo)
- Festschrift for Martin C. Gutzwiller on the Occasion of his 75. Birthday,  
Foundations of Physics, Vol. **30**, No. 12, 2000; Vol. **31**, No. 1, 2001; Vol. **31**, No. 2, 2001;  
Vol. **31**, No. 3, 2001  
(together with A. Inomata, L. S. Schulman, F. Steiner, A. van der Merve)
- *Strong Correlations and Disorder: Modern Aspects of Condensed Matter Theory*,  
Festschrift for Peter Wölfle on the Occasion of his 60. Birthday,  
J. Low Temp. Phys. Vol. **126**, No. 3/4, 2002  
(together with T. Kopp, J. Kroha, A. Rosch)

- *Cooperative Phenomena in Solids with Electronic Correlations*,  
Publication of scientific highlights of the Augsburg Collaborative Research Center (SFB) 484,  
Eur. Phys. J. Special Topics, Vol. **180**, 2009 (together with U. Eckern)
- Lecture Notes of the Autumn School 2011 “Hands-on LDA+DMFT  
*The LDA+DMFT approach to strongly correlated materials*  
Forschungszentrum Jülich, 2011  
(together with E. Pavarini, E. Koch, A. Lichtenstein)
- Lecture Notes of the Autumn School on Correlated Electrons  
*DMFT at 25: Infinite Dimensions*  
Forschungszentrum Jülich, 2014  
(together with E. Pavarini, E. Koch, A. Lichtenstein)

Augsburg; June 2017