

## Prof. Dr. Fakher Assaad

Date of birth: November 3, 1964

Gender: male

Office address: Institut für Theoretische Physik und Astrophysik  
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Position: Professor (C3)

Family status: Married, 2 children

## Academic Education

1983 – 1991 Undergraduate studies, ETH Zürich.

1988 Diploma, Physics, ETH Zürich.

1991 Doctoral degree, Physics, ETH Zürich.  
Supervisors: T. M. Rice and D. Würtz.

## Professional Career

1991 – 1993 Postdoctoral Research Associate, Universität Würzburg.

1994 – 1995 Postdoctoral Research Associate, University of Tokyo.

1996 – 1997 Postdoctoral Research Associate, University of California at Santa Barbara.

1997 – 2000 Research Associate, Universität Stuttgart.

1998 Habilitation, Universität Stuttgart.

2001 – 2003 Heisenberg Fellow of the DFG, Max-Planck-Institut für Festkörperforschung Stuttgart.

2003 –present Professor of Physics (C3), Universität Würzburg.

## Fellowships, Awards, and Services to the Community

1991	Second prize of the Seymour Cray Switzerland Competition. <i>Award received for Exact Diagonalization and Monte Carlo for Strongly Correlated Fermions: Phase Diagram of the One-Dimensional <math>t</math>-<math>J</math> Model</i> in collaboration with M. Ogata, M.U. Luchini, S. Sorella and D. Würtz.
1995	Research fellowship from the Japan Society for the Promotion of Science (January 1995 – December 1995).
1996	Research fellowship from the Swiss National Science Foundation (February 1996 – July 1997).
2000	Heisenberg Fellowship awarded by the DFG.
2009	Co-Spokesman of the DFG Research Unit FOR1162 <i>Electron correlation-induced phenomena in surfaces and interfaces with tunable interactions</i> .
2012	Project proposal for computational resources was awarded the <i>John von Neumann Exzellenz-Projekt 2012</i> prize.
2013	Spokesman of the DFG Research Unit FOR1807, <i>Advanced Computational Methods for Strongly Correlated Quantum Systems</i> .

## Selected Publications

- F. F. Assaad, T. Grover  
*Simple Fermionic Model of Deconfined Phases and Phase Transitions*,  
Phys. Rev. X **6**, 041049 (2016).
- F. F. Assaad, I. F. Herbut,  
*Pinning the order: the nature of quantum criticality in the Hubbard model on honeycomb lattice*,  
Phys. Rev. X **3**, 031010 (2013).
- F. F. Assaad, M. Bercx, M. Hohenadler,  
*Quantum Spin Models from Flux Tubes in Correlated Topological Insulators*,  
Phys. Rev. X **3**, 011015 (2013).
- F. F. Assaad, M. Bercx, M. Hohenadler,  
*Quantum Spin Models from Flux Tubes in Correlated Topological Insulators*,  
Phys. Rev. X **3**, 011015 (2013).
- M. Hohenadler, T. C. Lang, F. F. Assaad  
*Correlation effects in quantum spin-Hall insulators: a quantum Monte Carlo study*,  
Phys. Rev. Lett. **106**, 100403 (2010).
- F. F. Assaad, T. C. Lang,  
*Diagrammatic Determinantal methods: projective schemes and applications to the Hubbard-Holstein model*  
Phys. Rev. B **76**, 035116 (2007)

- F. F. Assaad,  
*Phase diagram of the half-filled two-dimensional SU(N) Hubbard-Heisenberg model:  
A quantum Monte Carlo study,*  
Phys. Rev. B **71**, 075103 (2005).
- F. F. Assaad,  
*Quantum Monte Carlo Simulations of the Half-Filled Two-Dimensional Kondo Lattice Model,*  
Phys. Rev. Lett. **83**, 796 (1999).
- F. F. Assaad, M. Imada, D. J. Scalapino,  
*Quantum Transition between an Antiferromagnetic Mott Insulator and  $d_{x^2-y^2}$  Superconductor in  
Two Dimensions,*  
Phys. Rev. Lett. **77**, 4592 (1996).
- F. F. Assaad, W. Hanke and D. J. Scalapino,  
*Flux Quantization in the two-Dimensional Repulsive and Attractive Hubbard models,*  
Phys. Rev. Lett. **71**, 1915 (1993).
- M. Ogata, M. U. Luchini, S. Sorella, F. F. Assaad,  
*Phase diagram of the one-dimensional  $t$ - $J$  model,*  
Phys. Rev. Lett. **66**, 2388 (1991).