

# Gerd Faltings



## Academic career

1978	PhD, University of Münster
1978 - 1979	Visitor, Harvard University, Cambridge, MA, USA
1979 - 1982	Assistant Professor, University of Münster
1981	Habilitation, University of Münster
1982 - 1984	Professor, University of Wuppertal
1985 - 1994	Professor, Princeton University, NJ, USA
Since 1994	Scientific Member, Max Planck Institute for Mathematics, Bonn
Since 1995	Director, Max Planck Institute for Mathematics, Bonn

## Honours

1984	Dannie Heinemann Prize
1986	Fields Medal
1988	Guggenheim Fellowship
1991	Member of the Göttingen Academy of Sciences and Humanities
1992	Member of the German National Academy of Sciences Leopoldina
1996	Leibniz Prize
1999	Member of the Berlin-Brandenburg Academy of Sciences and Humanities
1999	Member of the North Rhine-Westphalian Academy of Sciences, Humanities and the Arts
2008	Karl Georg Christian von Staudt Prize
2009	Bundesverdienstkreuz I. Klasse (Officer's Cross of the Order of Merit of the Federal Republic of Germany)
2010	Heinz Gumin Prize for Mathematics
2012	Honorary Doctorate, University of Münster
2014	King Faisal International Prize
2014	Member of the Academia Europaea
2015	Shaw Prize
2016	Foreign Associate of the Royal Society
2017	Cantor medal of the German Mathematical Society (Deutsche Mathematiker-Vereinigung, DMV)

## Invited Lectures

1986	International Congress of Mathematicians, plenary address, Berkeley, CA, USA
1994	International Congress of Mathematicians, invited talk, Zürich, Switzerland
2014	Heidelberg Laureate Forum
2015	Harald Bohr Lecture, Copenhagen, Denmark
2015	Chinese Academy of Sciences, Peking, China

## Research Projects and Activities

I do research on whatever I find interesting.

DFG Cluster of Excellence "Hausdorff Center for Mathematics",  
Principal Investigator and member of the Board of Directors

## Research profile

Diophantine equations  
Arakelov theory  
Abelian varieties

Moduli spaces of vectorbundles  
p-adic Hodge theory

### Editorships

- Compositio Mathematica (Associate Editor)
- Journal of Algebraic Geometry (Editorial Board)

### Former Research Area D

### Former Research Area E

**Research Area DE** a) I constructed an analogue of the category  $\mathcal{MF}$  for semistable schemes and used it to construct semistable models for (certain) Shimura varieties with level structures.  
b) I computed the asymptotics of Arakelov data on degenerating curves

### Supervised theses

PhD theses: 1

### Selected PhD students

Michael Larsen (1988): “Unitary Groups and L-Adic Representations”,  
now Professor, Indiana University, IN, USA

Wieslawa Niziol (1991): “On A Cohomological Functor Associated To Crystalline Representations”,

now Directrice de recherche, CNRS, UMPA, École Normale Supérieure de Lyon, France

Shinichi Mochizuki (1992): “The Geometry of the Compactification of the Hurwitz Scheme”,  
now Professor, Kyoto University, Japan

Tyler Jarvis (1994): “Compactification Of The Moduli Space Of Generalized Spin Curves”,  
now Professor, Brigham Young University, UT, USA

Christian Liedtke (2004): “On Fundamental Groups of Galois Closures of Generic Projections”,  
now Professor, TU Munich

Majid Hadian (2010): “Motivic Fundamental Groups and Integral Points”,  
now Scott-Russell-Johnson Research Assistant Professor, California Institute of Technology,  
Pasadena, CA, USA

### Selected publications

- [1] Ching-Li Chai and Gerd Faltings. *Degeneration of abelian varieties*, volume 22 of *Ergebnisse der Mathematik und ihrer Grenzgebiete (3) [Results in Mathematics and Related Areas (3)]*. Springer-Verlag, Berlin, 1990. With an appendix by David Mumford.
- [2] G. Faltings. The category  $\mathcal{MF}$  in the semistable case. *Izv. Ross. Akad. Nauk Ser. Mat.*, 80(5):41–60, 2016.
- [3] Gerd Faltings. Coverings of p-adic period domains. *J. Reine Angew. Math.*, 643:111–139, 2010.
- [4] Gerd Faltings. Algebraic loop groups and moduli spaces of bundles. *J. Eur. Math. Soc. (JEMS)*, 5(1):41–68, 2003.
- [5] Gerd Faltings. A relation between two moduli spaces studied by v. g. drinfeld. In *Algebraic number theory and algebraic geometry*, volume 300 of *Contemp. Math.*, pages 115–129. Amer. Math. Soc., Providence, RI, 2002.
- [6] Gerd Faltings. Almost étale extensions. *Astérisque*, (279):185–270, 2002. Cohomologies p-adiques et applications arithmétiques, II.
- [7] Gerd Faltings. A proof for the verlinde formula. *J. Algebraic Geom.*, 3(2):347–374, 1994.
- [8] Gerd Faltings. Stable g-bundles and projective connections. *J. Algebraic Geom.*, 2(3):507–568, 1993.
- [9] Gerd Faltings. Diophantine approximation on abelian varieties. *Ann. of Math. (2)*, 133(3):549–576, 1991.
- [10] Gerd Faltings. Calculus on arithmetic surfaces. *Ann. of Math. (2)*, 119(2):387–424, 1984.