

# Curriculum Vitae

## Dr Henrik Gustafsson

Born March 11, 1988, Sweden. Citizenship: Swedish  
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USA

## Current appointments

Sep, 2019                    **Member, School of Mathematics** (about 2 years)  
Princeton, NJ                **Institute for Advanced Study**  
USA                            Faculty contact: Akshay Venkatesh

Sep, 2019                    **Visiting Researcher** (about 2 years)  
New Brunswick,             **Rutgers, The State University of New Jersey**  
NJ                              Department of Mathematics  
USA                            Faculty mentor: Siddhartha Sahi

Sep, 2019                    **Postdoctoral Researcher** (about 3 years)  
Gothenburg                 **University of Gothenburg and Chalmers University of Technology**  
Sweden                        Department of Mathematical Sciences  
                                      Coordinating organization of my postdoctoral grant from the Swedish Research  
                                      Council

## Previous postdoctoral appointments

Oct, 2017 –                 **Wallenberg Postdoctoral Scholar**  
Sep, 2019                    **Stanford University**  
Stanford, CA                Department of Mathematics  
USA                            Faculty mentor: Daniel Bump

## Grants and scholarships

See also “Recent awards” below for details.

- **Swedish Research Council International Postdoc Grant** (2019)  
3-year postdoc grant
- **The Wallenberg Foundation Postdoctoral Scholarship at Stanford University** (2017)  
2-year postdoc scholarship

## Education

- Aug 25, 2017  
2013 – 2017  
Gothenburg  
Sweden
- Doctoral degree**  
**Chalmers University of Technology**  
Degree of Doctor of Philosophy in Fundamental Physics with specialization in Mathematical Physics  
Thesis title: Automorphic forms and string theory: Small automorphic representations and non-perturbative effects  
Thesis advisor: Daniel Persson (Department of Mathematics, Chalmers)
- Dec 14, 2015  
Gothenburg  
Sweden
- Licentiate degree**  
**Chalmers University of Technology**  
Degree of Licentiate of Engineering in Fundamental Physics with specialization in Mathematical Physics  
Thesis title: Automorphic string amplitudes  
Thesis advisor: Daniel Persson (Department of Fundamental Physics, Chalmers)
- Oct 19, 2012  
2011 – 2012  
Waterloo, ON  
Canada
- Degree of Master of Science in Physics**  
**Perimeter Institute and University of Waterloo** (degree-granting)  
Perimeter Scholars International  
Thesis title: Minimal Surfaces for Scattering Amplitudes and the Harmonic Oscillator  
Thesis advisor: Pedro Vieira (Perimeter Institute)
- Jun 4, 2013  
2010 – 2011,  
2012 – 2013  
Gothenburg  
Sweden
- Degree of Master of Science in Fundamental Physics**  
**Chalmers University of Technology**  
Thesis title: Eisenstein Series and Instantons in String Theory  
Thesis advisor: Daniel Persson (Fundamental Physics, Chalmers)
- Jun 1, 2010  
2007 – 2010  
Gothenburg  
Sweden
- Degree of Bachelor of Science in Engineering Physics**  
**Chalmers University of Technology**  
Thesis title: Geometry, Topology and Physics  
Thesis advisor: Per Salomonson (Fundamental Physics, Chalmers)

## Recent awards

- 2019                    **Swedish Research Council International Postdoc Grant**  
Three-year grant from the Swedish Research Council (Vetenskapsrådet) for postdoctoral research. The coordinating organization for the grant is the University of Gothenburg.
- Project ID: 2018-06774. Project details:  
<https://www.swecris.se/betasearch/details/project/201806774VR?lang=en>
- 2017                    **The Wallenberg Foundation Postdoctoral Scholarship at Stanford University**  
Awarded a two-year postdoctoral scholarship at the Department of Mathematics, Stanford University. The scholarship is awarded to outstanding young Swedish scientists in all disciplines of science.
- <https://kaw.wallenberg.org/en/calls/wallenberg-foundation-postdoctoral-scholarship-program-stanford-university>
- 2014                    **John Ericsson medal**  
Each year Chalmers University of Technology awards six newly graduated students with the John Ericsson medal based on performance. The six recipients were chosen from 750 Master of Science students that graduated from Chalmers in 2013.
- 2013–2017            **Travel/conference grants**  
I have also been awarded various travel and conference grants from the following Swedish foundations:
- Stiftelsen Wilhelm och Martina Lundgrens vetenskapsfond
  - Stiftelsen Karl och Annie Leons minnesfond för vetenskaplig forskning
  - Stiftelsen Lars Hiertas minne
  - Stiftelsen Långmanska kulturfonden

## Publications

Please see <https://hgustafsson.se/publications/> or <https://orcid.org/0000-0002-3364-1547>

## Invited talks

Please see [hgustafsson.se/talks](http://hgustafsson.se/talks) for titles, abstracts, slides and more information.

2020-09-29	Institute for Advanced Study	<i>Postdoc member short talk</i>
2020-08-21	University of Ottawa	<i>Quantum Groups, Representation Theory, Superalgebras, and Tensor Categories : an on-line conference</i>
2020-07-21	Institute for Advanced Study	<i>Basic Notions Seminar in Number Theory</i>
2020-04-30	Institute for Advanced Study and Princeton University	<i>Joint Number Theory Seminar</i>
2019-11-13	Yale, New Haven	<i>Colloquium, Department of Mathematics</i>
2019-10-04 – 2019-11-01	Rutgers, New Brunswick	<i>Five-part seminar series in working group: Symmetric functions and applications</i>
2019-09-25	Institute for Advanced Study	<i>Postdoc member short talk</i>
2019-03-06	Simons Center, Stony Brook	<i>Two-parts overview lecture in workshop: Automorphic Structures in String Theory</i>
2018-12-18	Chalmers, Gothenburg	<i>Algebraic Geometry and Number Theory Seminar</i>
2018-12-07	Rutgers, New Brunswick	<i>Lie Group/Quantum Mathematics Seminar</i>
2018-11-28	Stanford	<i>Quantum Groups Learning Seminar</i>
2017-12-20	Chalmers, Gothenburg	<i>Algebraic Geometry and Number Theory Seminar</i>
2017-07-18	KIAS, Seoul	<i>Four lectures during the program Arithmetic Geometry and Quantum Field Theory</i>
2017-01-30	Oxford	<i>String theory seminar</i>
2016-12-06	AEI, Potsdam	<i>Seminar</i>
2016-11-15	ULB, Brussels	<i>HEP seminar</i>
2016-11-03	DAMTP, Cambridge	<i>String theory seminar</i>
2016-10-11	IPhT Saclay, Paris	<i>Séminaire de matrices, cordes et géométries aléatoires</i>
2016-10-05	Stanford (SITP)	<i>SITP seminar</i>
2016-10-04	Stanford (math dep.)	<i>Representation theory seminar</i>
2016-09-30	Rutgers, New Brunswick	<i>Lie Group/Quantum Mathematics Seminar</i>
2016-09-14	Simons Center, Stony Brook	<i>Program: Automorphic forms, mock modular forms and string theory</i>
2016-01-26	Rutgers, New Brunswick	<i>Number Theory Seminar</i>
2015-06-22	Strings 2015, Bangalore	<i>Poster session</i>
2015-06-11	Advanced Strings School, Bangalore	<i>Gong-show</i>
2015-03-17	AEI, Potsdam	<i>Seminar</i>
2015-03-10	Chalmers, Gothenburg	<i>Fundamental physics group seminar</i>

## Workshops, conferences, doctoral schools and extended visits

Events in 2020 have been online due to the pandemic.

- 2020-09-29 – 2020-10-02 **New Connections in Integrable Systems**  
University of Queensland, Brisbane, Australia
- 2020-05-11 – 2019-05-14 **Conference on Representation Theory and Algebraic Analysis  
in honor of Joseph Bernstein on the occasion of his 75th birthday**  
Weizmann Institute of Science, Rehovot, Israel
- 2019-03 – 2019-04 **Automorphic structures in string theory**  
*Simons Center for Geometry and Physics, Stony Brook*
- 2018-06 **Automorphic forms on reductive groups and their covers:  
A conference in honour of Solomon Friedberg**  
*ETH, Zürich*
- 2017-10 **Automorphic forms, mock modular forms and string theory**  
*BIRS, Banff*
- 2017-07 **Arithmetic Geometry and Quantum Field Theory**  
*KIAS, Seoul*
- 2016-08 – 2016-10 **Automorphic forms, mock modular forms and string theory**  
*Simons Center for Geometry and Physics, Stony Brook*
- 2016-06 **String-Math 2016**  
*Collège de France, Paris*
- 2016-05 **Number theory and physics workshop**  
*Institut Henri Poincaré, Paris*
- 2016-05 – 2016-06 **Program on the mathematics of string theory**  
*Institut Henri Poincaré, Paris*
- 2016-01 – 2016-02 **Extended visit for collaborations** Rutgers University, New Brunswick
- 2015-06 **Strings 2015**  
*International Centre for Theoretical Physics, Bangalore*
- 2015-06 **Advanced Strings School 2015**  
*Indian Institute of Science, Bangalore*
- 2014-09 **Journées de Physique Mathématique Lyon**  
BPS States, Hitchin Systems, and Quivers  
*University of Lyon*
- 2014-06 **Strings 2014**  
*Princeton University and the Institute for Advanced Study, Princeton*

- 2014-06            **Prospects of Theoretical Physics**  
*Institute for Advanced Study, Princeton*
- 2013-09 – 2013-12   **Amsterdam-Brussels-Paris Doctoral School**  
*Solvay Institutes (Brussels), École Normale Supérieure (Paris),  
University of Amsterdam*
- 2013-06            **Strings 2013**  
*Sogang University, Seoul*
- 2013-06            **String-Math Conference**  
*Simons Center, Stony Brook*
- 2013-03            **Spring School on Superstring Theory and Related Topics**  
*ICTP, Trieste*
- 2013-02            **CERN Winter School on Supergravity, Strings and Gauge Theory**  
*CERN, Geneva*

## Teaching

- 2019-10            **Lecture series**  
Rutgers  
New Brunswick      Lecture series in five parts about Whittaker functions and (non)symmetric polynomials for a wide audience in mathematics. In working group: Symmetric functions and applications.
- 2017-07            **Lecture series**  
KIAS  
Seoul                 Invited for four blackboard lectures titled Automorphic Forms and String Theory for the CMC Thematic Program on Arithmetic Geometry and Quantum Field Theory.
- 2017                **Development of web-based platform for E-learning**  
Chalmers  
Gothenburg          I was part of a team that is developing an e-learning platform used in classical mechanics courses at the Department of Physics.  
  
*Work tasks included planning and development of the web-based system as well as designing exercises with a lot of interaction with the students.*
- 2013 – 2017        **Courses taught during PhD - TA**  
Chalmers  
Gothenburg          Special relativity, Quantum mechanics (master's students), Classical mechanics, Calculus and Advanced calculus.  
  
*Work tasks included careful preparations of mostly my own material and solutions, demonstrations of exercises and theorems on the blackboard, answering questions, and constructing and grading assignments and exams.*

2009-09 – 2011-06 **Amanuensis - TA**

Chalmers Teaching assistant while continuing own studies.

Gothenburg Department of Mathematical Sciences.

20 percent part time employment.

Calculus and Linear Algebra, undergraduate level.

*Work tasks included careful preparations of mostly my own material and solutions, demonstrations of exercises and theorems on the blackboard, answering questions, providing personal support, supervising and grading mid-term tests and giving general math support at the university library.*