

Curriculum Vitae Astrid S. de Wijn

Family name	de Wijn
Given names	Astrid Silvia
Date of birth	28 September 1979
Place of birth	De Bilt, The Netherlands
Nationality	Netherlands
Marital status	Single
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Education

Sept. 1990 – June 1996	Grammar school, Stedelijk Gymnasium Amersfoort
Sept. 1996 – Aug. 2001	Studies in physics and mathematics, Utrecht University
29 Aug. 1997	Propedeutisch examen physics and astronomy (cum laude)
29 Aug. 1997	Propedeutisch examen mathematics (cum laude)
17 April 2000	Doctoraal examen (master's degree) theoretical physics (thesis title: "Randall-Sundrum Compactification"; thesis advisor: Professor E. P. Verlinde)
16 Aug. 2001	Doctoraal examen (master's degree) mathematics
22 Nov. 2004	Ph. D. degree (thesis title: "Chaos in systems with many degrees of freedom"; thesis advisor: Professor H. van Beijeren, Institute for Theoretical Physics, Utrecht University)

Fellowships

17 april 2007	NWO Veni fellowship at the Institute for Molecules and Materials, Radboud University Nijmegen (title: "Towards a statistical mechanics for small systems, the time-scale separation approach to surface transport"). The fellowship is for three years and I will probably start in january 2008.
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Employment

1 Sept. 1998 – 31 Aug. 1999	Teaching assistant first-year problem-solving sessions in physics, Utrecht University
1 Sept. 1999 – 31 Oct. 1999	Teaching assistant third-year problem-solving sessions in advanced classical mechanics, Utrecht University
1 Jan. 2000 – 31 May 2000	Teaching assistant first-year physics laboratory, Utrecht University
1 July 2000 – 31 Dec. 2004	Ph. D. position, Institute for Theoretical Physics, Utrecht University. Employment by the Netherlands Foundation FOM (Fundamental Research of Matter). The position included teaching duties in problem-solving sessions of third-year advanced classical mechanics, thermal and statistical physics, and theory of solid-state physics, as well as second-year classical mechanics.

- 1 Jan. 2005 – 31 Dec. 2006 Postdoctoral position at the Max Planck Institute for the Physics of Complex Systems, Dresden. Employment through the Visitors Program. Collaborations in two groups: Electronic Structure of Finite Systems (Professor S. Kümmel, presently Universität Bayreuth) and Nonlinear Time Series Analysis (Professor H. Kantz).
- 8 Jan. 2007 – present Research Associate (postdoc) “Kinetic Theory” at the Department of Earth Science and Engineering, Imperial College, London.

Physics Olympiads

June 1995	Dutch National Physics Olympiad 1995: fourth prize
July 1995	26th International Physics Olympiad, Canberra, Australia: honourable mention
June 1996	Dutch National Physics Olympiad 1996: second prize
July 1996	27th International Physics Olympiad, Oslo, Norway: bronze medal

Miscellaneous scientific activities

2005 – present Reviewing for Mathematical Reviews

Miscellaneous nonscientific activities

PION 97 (Dutch Interuniversity Team Physics Competition): first prize; Organisation of PION 98; Archery at SHS Geronimo in Zeist, The Netherlands; Competitive Go at the Go Club Utrecht; Installation and maintenance of Linux servers at Utrecht University; Various volunteer translation activities.

Language skills

Dutch (native speaker), English (fluent), German, French.

Publications

1. Astrid S. de Wijn and Henk van Beijeren, “Goldstone modes in Lyapunov spectra of hard-sphere systems”, *Phys. Rev. E* **70**, 016207 (2004).
2. Astrid S. de Wijn and Henk van Beijeren, “The Lyapunov spectrum of the many-dimensional dilute random Lorentz gas”, *Phys. Rev. E* **70**, 036209 (2004).
3. Astrid S. de Wijn, “Chaos in systems with many degrees of freedom”, Ph. D. thesis, Utrecht University (2005).
4. Astrid S. de Wijn, “The Kolmogorov-Sinai entropy for dilute hard particles in equilibrium”, *Phys. Rev. E* **71**, 046211 (2005).
5. Astrid S. de Wijn, “The Lyapunov spectrum of the many-dimensional system of dilute cylindrical scatters”, *Phys. Rev. E* **72**, 026216 (2005).
6. Astrid S. de Wijn, “Equivalence of kinetic theory and random-matrix approaches to Lyapunov spectra of hard-sphere systems”, submitted to *Physical Review E*.
7. Astrid S. de Wijn, Stephan Kümmel, and Manfred Lein, “Numerical aspects of real-space approaches to strong-field electron dynamics”, accepted by *Journal of Computational Physics* (2007).
8. Astrid S. de Wijn, Stephan Kümmel, and Manfred Lein, “Correlation and adiabaticity in density-functional theory treatment of 1d helium”, in preparation.
9. Astrid S. de Wijn and Henk van Beijeren, “Radius-of-curvature approach to calculating the Kolmogorov-Sinai entropy of dilute hard spheres in equilibrium”, in preparation.
10. Astrid S. de Wijn and Holger Kantz, “Vertical chaos and horizontal diffusion in the bouncing-ball billiard”, *Phys. Rev. E* **75**, 046214 (2007).

Talks

1. Astrid S. de Wijn, “Goldstone modes in Lyapunov spectra of hard-sphere systems”, *Microscopic Chaos and Transport in Many-Particle Systems*, Dresden, Germany, 5–25 August 2002 [invited talk and poster].
2. Astrid S. de Wijn, “Collective modes in Lyapunov spectra of hard-sphere systems”, *Institut für Experimentalphysik, Universität Wien, Austria*, 12 March 2003.
3. Astrid S. de Wijn and Henk van Beijeren, “Lyapunov exponents of Goldstone modes in hard-sphere systems”, *Nonlinear Dynamics and Statistical Mechanics Days, Centre for Nonlinear Phenomena and Complex Systems, Université Libre de Bruxelles, Belgium*, 26–27 April 2004.
4. Astrid S. de Wijn, “Lyapunov spectra of systems of many hard spheres”, *Wetenschappelijke Vergadering Mathematische Fysica, Amersfoort, The Netherlands*, 17 June 2004.
5. Astrid S. de Wijn, “Lyapunov exponents of Goldstone modes in hard-sphere systems”, *CECAM Workshop on Stability, Fluctuations and Transient Behaviour in Nonequilibrium Systems, Lyon, France*, 19–22 July 2004 [invited].
6. Astrid S. de Wijn, “Chaos in systems with many degrees of freedom”, *Max Planck Institute for the Physics of Complex Systems, Dresden, Germany*, 1 September 2004 [invited].
7. Astrid S. de Wijn and Henk van Beijeren, “Chaos in systems with many degrees of freedom”, *Energieriche Atomare Stöße Tagung, Riezlern, Austria*, 31 January–4 February 2005 [talk and proceedings].

8. Astrid S. de Wijn, “Chaos in systems with many degrees of freedom”, Institute of Theoretical Physics, Radboud University Nijmegen, The Netherlands, 16 February 2005 [invited].
9. Astrid S. de Wijn, “Density-functional theory, the adiabatic approximation, and correlation in 1d helium”, Max Planck Institute for Nuclear Physics, Heidelberg, Germany, 1 June 2005 [invited].
10. Astrid S. de Wijn, “Correlation and adiabaticity in density-functional theory treatment of 1d helium”, Institute for Theoretical Physics, Utrecht University, The Netherlands, 21 July 2005 [invited].
11. Astrid S. de Wijn, Stephan Kümmel, and Manfred Lein, “Correlation and adiabaticity in density-functional theory treatment of 1d helium”, Intense Laser-Matter Interaction and Pulse Propagation, Dresden, Germany, 1–24 August 2005 [talk and poster].
12. Astrid S. de Wijn, Stephan Kümmel, and Manfred Lein, “A new adiabatic density-functional treatment of ionisation in helium”, Frühjahrstagung des Arbeitskreises Atome, Moleküle, Quantenoptik und Plasmen (AMOP), Frankfurt, Germany, 13–17 March 2006.
13. Astrid S. de Wijn, “Chaotic properties of systems of many hard particles”, DPG Spring Meeting of the Division Condensed Matter, 21st General Conference of the EPS Condensed Matter Division, Dresden, Germany, 26–31 March 2006.
14. Astrid S. de Wijn, “Analytical calculations of Lyapunov spectra of high-dimensional billiards”, Nonlinearities - From turbulent to magic, NORDITA and Niels Bohr Institute thematic workshop, Copenhagen, Denmark, 17–20 May 2006 [invited].
15. Astrid S. de Wijn, “Analytical calculations of Lyapunov spectra of high-dimensional billiards”, Institut für Physik, Technische Universität Chemnitz, Germany, 14 June 2006 [invited].
16. Astrid S. de Wijn, “Analytical calculations of Lyapunov spectra of high-dimensional billiards”, Department of Mathematics, University of Bristol, United Kingdom, 28 June 2006 [invited].
17. Astrid S. de Wijn, “Vertical chaos and horizontal diffusion in the bouncing-ball billiard”, Dynamics Days Europe 2006, Crete, Greece, 25–29 September, 2006.

Posters, etc.

1. Astrid S. de Wijn and Henk van Beijeren, “Calculations of the smallest positive Lyapunov exponents of a hard-sphere system in two dimensions”, Trends in Theory 2001, Dalfsen, The Netherlands, 31 May – 1 June 2001.
2. Astrid S. de Wijn and Henk van Beijeren, “Goldstone modes in Lyapunov spectra for hard-sphere systems”, Scientific meeting FOM Statistical Physics, Lunteren, The Netherlands, 23–24 January 2003.
3. Astrid S. de Wijn and Henk van Beijeren, “Boltzmann approach to Lyapunov spectra of hard-sphere systems”, Scientific meeting FOM Statistical Physics, Lunteren, The Netherlands, 22–23 January 2004.
4. Astrid S. de Wijn and Henk van Beijeren, “Lyapunov spectrum of the many-dimensional dilute random Lorentz gas” Scientific meeting FOM Statistical Physics, Lunteren, The Netherlands, 20–21 January 2005.

5. Astrid S. de Wijn, Stephan Kümmel, and Manfred Lein, “Correlation and adiabaticity in density-functional theory treatment of 1d helium”, International Workshop on Atomic Physics: Electronic correlation in atomic and molecular dynamics, Dresden, Germany, 28 November–2 December 2005.
6. Astrid S. de Wijn and Holger Kantz, “Vertical chaos and horizontal diffusion in the bouncing-ball billiard”, Anomalous Transport: Experimental Results and Theoretical Challenges, Bad Honnef, Germany, 12–16 July 2006.
7. Astrid S. de Wijn, “Analytical calculations of Lyapunov spectra of high-dimensional billiards”, Dynamics Days Europe 2006, Crete, Greece, 25–29 September, 2006 [poster prize].