

CURRICULUM VITAE

Department of Earth & Space Sciences
Onsala Space Observatory
Chalmers University of Technology
SE-439 92 Onsala, Sweden

Email: *Cathy.Horellou@chalmers.se*
Phone: +46 31 772 5504
Fax: +46 31 772 5590

Web: www.chalmers.se/rss/EN/contact/staff/academic-staff/horellou-cathy

IDENTITY

Born on February 4, 1967 in Quimper (France). French citizen, resident in Sweden since 1994.
Married to John H. Black; two children, Steven and Gwenaelle, born 1997 and 2001.
Languages: French, German, English, Breton, Swedish.

EDUCATION

- Sept. 2002 Docent in Physics. Chalmers University of Technology, Göteborg, Sweden.
* “Qualification as Docent requires, in addition to Ph.D., substantially greater documented independent ability to lead in formulating and solving scientific research problems, as well as pedagogical competence at the advanced graduate study level.”
- May 17, 1994 Ph.D. in Astrophysics and Space Techniques.
Université de Paris VII, Observatoire de Paris-Meudon, France.
The interstellar medium of ring galaxies (written in French).
Thesis advisors: Fabienne Casoli and Françoise Combes.
- May 1990 Diploma thesis (“Diplomarbeit”) in Physics.
Max-Planck Institut für Radioastronomie, Bonn, Germany.
The magnetic field in the spiral galaxy M 51 (written in German).
Thesis advisor: Rainer Beck.
- Dec. 1988 “Diplomprüfung” in Physics.
Friedrich-Wilhelm Universität, Bonn, Germany.
- 1987 to 1996 Undergraduate studies leading to a “Maîtrise” in German literature.
Université de Bretagne Occidentale in Brest, France.
- 1984 to 1988 Undergraduate studies leading to a “Maîtrise” in Physics.
Université de Bretagne Occidentale in Brest, France.

APPOINTMENTS

- May 2012– Professor (“biträdande professor”) at the Dept of Earth & Space Sciences, Chalmers.
Nov. 2002–April 2012 Associate professor (“Docent”) at Chalmers. Permanent position since Oct. 2004.
July 1998–Oct. 2002 Assistant professor (“forskarassistent”) at Chalmers.
1997–2008 A total of about one year of parental leave.
Jan. 1996–June 1998 Research engineer (“första forskningsingenjör”) at Onsala Space Observatory.
Aug. 1995–Dec. 1995 Astronomer on duty at the Swedish-ESO Submillimeter Telescope (SEST, Chile).
Mar. 1994–July 1995 Guest scientist (post-doc) at Onsala Space Observatory.

EXTENDED RESEARCH VISITS ABROAD

- 2008 Four-month research visit to the University of California, Berkeley, USA, funded by a grant from the Barbro Osher Pro Suecia Foundation.
Host: Adrian Lee, Physics Department.
- Sept. 2004 One-month research visit to the Institute for Advanced Study, Princeton, USA, funded by a grant-in-aid from the Institute. Host: John Bahcall.
- May 2002 One-month research visit to Paris Observatory as a guest assistant astronomer (“astronome adjoint”). Host: Françoise Combes.

GRANTS (SINCE 2006)

2010–2012	Research grant from the Swedish Research Council: 50% freeship.
2009	Grant from the Swedish Foundation for Strategic Research: 200 000 kr to develop SALSA, a small radio telescope for education.
Since 2001	Several travel grants from the Swedish Research Council (“ <i>Vetenskapsrådet</i> ”).
2007–2009	Research grant from the Swedish Research Council: 50% freeship.
2004–2006	Research grant from the Swedish Research Council: 50% freeship.

RESEARCH INTERESTS

- Cosmology: dark energy, clusters of galaxies, Sunyaev-Zeldovich effect, high-redshift galaxies.
- Galaxies: observations, mainly in the radio, millimeter and submm domain, and N-body simulations.
- Galactic magnetic fields, polarization and depolarization.
- Modeling, numerical techniques.

OBSERVING EXPERIENCE

• **Optical telescope:** ESO 1.52m (Chile). • **Infrared band:** Infrared Space Observatory. • **Millimeter/submillimeter band:** APEX 12m radio telescope (Chile). • **Millimeter band:** SEST 15m radio telescope (Chile), Onsala 20m radio telescope (Sweden), IRAM 30m radio telescope (Spain), Berkeley-Illinois-Maryland Array. • **Centimeter band:** Effelsberg 100m (Germany), Very Large Array (USA), Nançay (France), Parkes (Australia), Australia Telescope Compact Array, SALSA-Onsala 2.3m, LOFAR.

TEACHING EXPERIENCE

- **Introductory courses**
 - ▷ “Milstolpar inom astrofysiken” (lectures given in Swedish) at Chalmers and Göteborgs Universitet (GU), Fall 2000, 2001, 2002, 2003.
 - ▷ “Landmarks in astrophysics” (lectures in English) at Chalmers and GU, Fall 1999.
- **Advanced courses**
 - ▷ “Numerical methods & applications”, in the Chalmers international master’s programme “Radio and space science”, every year between 2003 and 2011 (with A. Romeo and R. Haas).
 - ▷ “Galaxies and observational cosmology”, in the Chalmers international master’s programme “Radio and space science”, every year since 2009 (with M. Thomasson).
 - ▷ “Galaxies”, in the astrophysics programme at Chalmers and GU, Oct.–Dec. 2001 (shared with T. Wiklind), 2002, 2003, 2005, 2006.
 - ▷ “Galaxies and cosmology” (exercises) at Chalmers and GU, Spring 1998 and 2000.
- **Graduate course**
 - ▷ “High energy astrophysics” at Onsala Space Observatory, Feb.–June 1995 (shared with G. Rydbeck).
- **PhD examining committees**

Member of the PhD examining committee of Ana Maria Hidalgo-Gómez (Uppsala University, June 1999), Rikard Jonsson (Chalmers, Oct. 2004), Erik Zackrisson (Uppsala University, June 2005), Ian Jasper A. Augulo (Chalmers, June 2007), Rodrigo Parra (Chalmers, June 2007), Tomi Ylinen (Royal Institute of Technology, Stockholm, June 2010), Laia Mencia Trinchant (Stockholm University, Oct. 2011), Nicolas Clerc (Saclay, France, Feb. 2012), Alfredo Montana Barbano (INAOE, Puebla, Mexico, Oct. 2012), Simon Candelaresi (Nordita, Stockholm, Dec. 2012), David Mulcahy (Bonn, Germany, May 2014).
- **Advising PhD students**

Daniel Johansson (Chalmers, since April 2006; licentiate thesis in Dec. 2009, PhD in April 2011). *Observations of submillimeter galaxies and of the Sunyaev-Zeldovich effect toward clusters of galaxies*
Haukur Sigurdarson (Chalmers, Sep. 2010–Sep. 2012).
Co-advisor of Bernard Duah Asabere (University of Johannesburg, South Africa, since July 2011; main advisor: Hartmut Winkler).
- **Advising master’s students** (“*examensarbete*”). Most of the theses correspond to half a year of full-time studies. The exchange students from Orsay did three-month projects.

Sarrvesh S. Sridhar	Chalmers	Dec. 2012–Sep. 2013	<i>Modelling the gravitationally lensed quasar PKS 1830–211</i>
			Co-supervisor: Sébastien Muller
Annika Franeck	G.U.	Jan.–June 2012–	<i>Radio emission of clusters of galaxies in the XMM-LSS field</i>
Robert Singh	G.U.	Jan.–Dec. 2010	<i>Sunyaev-Zeldovich observations of the merging galaxy cluster Abell 2744</i>
Alexander Koloczek	G.U.	Jan.– Dec. 2010	<i>Sunyaev-Zeldovich observations of Abell 2744</i>
Haukur Sigurdarson	Chalmers	Jan.– Nov. 2010	<i>Gravitational lensing by galaxy clusters</i>
Mihaela Badescu	Chalmers	July– December 2007	<i>Constraints on cosmological parameters from observational data</i>
Per Bjerkeli	Chalmers	May– November 2007	<i>N-body simulations of interacting galaxies</i>
Annop Wongwathanarat	Chalmers	June– October 2006	<i>N-body and hydrodynamical simulations of clusters of galaxies</i>
Nicolas Taburet	Orsay, France	April–July 2006	<i>Modeling a bow-shock in a cluster of galaxies</i>
William Labanne	Orsay, France	April–July 2006	<i>Dark energy, dark matter and structure formation</i>
Syed Ashraf Uddin	Chalmers	July 2005– April 2006	<i>The Sunyaev-Zeldovich effect in clusters of galaxies</i>
Niklas Vahlne	Chalmers	Oct. 2004– Nov. 2005	<i>Influence of cosmological parameters on the CMB power spectrum</i>
Alexandre Monza	Orsay, France	April–July 2005	<i>N-body simulations of the collision of two galaxies</i>
Julia Magnusson	GU	Sept. 2004–June 2005	<i>Dark energy and cosmic expansion</i>
Martin Larsson	GU	Sept. 2004–June 2005	<i>The Sunyaev-Zeldovich effect: Cosmological aspects and observational prospects</i>
Martin Nord	Chalmers	April 2004–April 2005 (double master’s thesis)	<i>Constraining the redshift dependance of the CMB temperature using the SZ effect</i>
Daniel Johansson	Chalmers	Sept. 2004–April 2005	<i>Determining the cosmological temperature-redshift relation using the SZ effect</i>
Perceval Guillou	Orsay, France	April–July 2004	<i>Formation of clusters of galaxies in the presence of dark energy</i>
Anna Lévy	Orsay, France	April–July 2004	<i>The Sunyaev-Zeldovich effect</i>
Guillaume Denby-Wilkes	Orsay, France	April–June 2004	<i>Cosmological N-body simulations of structure formation</i>
Theresa Wiegert	GU	July 2002–June 2003	<i>Galaxy evolution – the deepest view of the Universe</i>
			Co-supervisor: D. de Mello
Joël Bergé	Orsay, France	April–June 2003	<i>Dark energy and evolution of large-scale structure</i>
Stefan Bergström	Chalmers	Oct. 2000–Feb. 2001	<i>Simulations of galaxy interactions using the tree-code GADGET</i>
Bruno Karlsson	GU	Jan.–June 1999	<i>Gas and star formation in colliding galaxies</i>

Chalmers examiner of the master’s thesis of Yu-Yen Chang, entitled “*The influence of large-scale filaments on cluster SZE observations and on some cosmological parameters*”, done at the Institute of Astronomy and Astrophysics in Taipei, Taiwan, under the supervision of Patrick Koch (2008).

• **Advising bachelor students** (“kandidatarbete” for third-year students), together with Daniel Johansson:

- Eskil Varenius, Staffan Josefsson, Martin Olsson Chalmers 2008
Studentteleskopet SALSA Onsala. En utvärdering av konceptet och dess framtida vägval
- Arvid Hammar, Jakob Lennartson Chalmers 2008
Radioastronomiska studier av Vintergatans struktur och kinematik

OTHER PROFESSIONAL ACTIVITIES (SINCE 2006)

- Since April 2014: Director of the Master’s program in Physics & Astronomy at Chalmers (MPPAS) and of the corresponding Master’s program in Physics at Gothenburg University (N2PHY).
- Since 2012: **Reviewer of postdoc applications** in astrophysics to Nordita, Stockholm.
- Since 2012: Member of the **LOFAR Sweden executive committee** responsible for the distribution of the Swedish observing time.
- Since May 2011: Member of the **steering committee of XXL**, a large research program led by M. Pierre (Saclay, France), to analyze observations with the XMM-Newton satellite of 50 deg² of the sky, with the ultimate goal to constrain dark energy. Extensive multi-wavelength follow-up program.
- Since 2010: Member of the **Board of the Swedish Astronomical Society**.
- **Reviewer of observing proposals** to the JCMT (James Clerk Maxwell Telescope), a 15 m telescope located in Hawaii, for the Canadian time allocation committee (2011, 2012), to the CFHT (Canada France Hawaii Telescope) for the French time allocation committee (2014) and to the Large Millimeter Telescope in Mexico (2013).
- 2011, 2013: **Reviewer of applications** from Chalmers to the Hasselblad foundation (grants to young female researchers).
- 2010: **Reviewer of a research proposal** to the Swiss National Science Foundation.
- 2008–2011: Member of the **Editorial board of *Populär astronomi***, the magazine of the Swedish Astronomical Society.
- 2005–2012: Member and secretary of the **Swedish National Committee for Astronomy**.
- 2004–2011: Working about 20% on **scientific outreach**.
- 2006: Expert advisor in the cosmology panel of the **ESO Observing Programmes Committee**.
- 2005–2008: Member of the **Faculty council** (*Fakultetsråd*) at Chalmers.
- **Referee** for the main astronomical journals (A&A, ApJ, MNRAS, AJ...)
- **Organization of conferences (since 2012)**: Member of the Scientific Organizing Committee (SOC) of the conference **Cosmic Magnetic Fields** to be held in Krakow, Poland, in Oct. 2014. Member of the SOC of the workshop **Galactic Magnetism in the Era of LOFAR and SKA** held in Stockholm in Sept. 2013; Member of the SOC and Local Organizing Committee (LOC) of the meeting of **the LOFAR Magnetism** Key Science Project held at Chalmers and in Onsala on May 29–June 1st, 2012.

Publications
(Last update: May 2014)

[Link to ADS \(all papers\)](#)