

Born 29th of March 1978  
Nationality: Swiss

## Dr. Claudia de Rham

Perimeter Institute  
31, Caroline Street north  
Waterloo, ON N2L 2Y5  
crham@perimeterinstitute.ca

### Research Interests

- **Massive Gravity and Degravitation**  
Weakening the effect of the vacuum energy on the geometry by means of the graviton mass  
Understanding theories of massive gravity beyond the linearized level
- **SLED** (Supersymmetric Large Extra Dimensions)  
Tackling the Naturalness Problem of the Cosmological Constant by the mean of two compactified supersymmetric extra dimensions.
- **Physics of codimension-2 objects**  
Exploring the effective physics for observers localized on codimension-2 branes or cosmic string and understanding the consequences for the Hierarchy problem and the Cosmological Constant problem.
- **Cosmological Perturbations**  
Probing signatures of models of brane inflation through cosmological perturbations

### Academic Positions

From Jan. 2010	<b>Assistant Professor in Cosmology</b> <b>Geneva University</b> , Department of Theoretical Physics, Switzerland
Nov. 2006 – Dec. 2009	<b>Joint postdoctoral position in Cosmology</b> <b>McMaster University</b> , Department of Physics & Astronomy, Canada, and <b>Perimeter Institute for Theoretical Physics</b> , Waterloo, Canada
Nov. 2005 – Oct. 2006	<b>Postdoctoral position in Cosmology</b> <b>McGill University</b> , Department of Physics, Montréal, Canada

### Education

Jan. 2002 – Oct. 2005	<b>PhD in Cosmology</b> <b>Cambridge University</b> , Department of Applied Mathematics and Theoretical Physics, UK Thesis Title: “Braneworld Cosmology beyond the low-energy limit” Focus on theoretical signatures of Braneworld Cosmology in the Early Universe. Supervisor: Prof. Anne Davis
Oct. 2000 – July 2001	<b>EPFL</b> , Swiss Institute of Technology, Lausanne, degree in <b>Physics</b>
August 1998 – July 2000	<b>Ecole Polytechnique of Paris</b> , Engineer degree in <b>Physics</b>
Oct. 1996 – July 1998	<b>EPFL</b> , Swiss Institute of Technology, Lausanne, two first years in <b>Physics</b>
1989 – 1996	<b>French High School of Tananarive</b> , Madagascar.

## Lecturing Experience

August 2008	<b>Main lecturer</b> at the Nordita <b>Summer School</b> on de Sitter Cosmology for graduate students
Jan – April 2008	<b>Lecturer in General Relativity</b> , University of Waterloo, (AMATH 475/675, PHYS 476)
August 2007	<b>Mentor</b> at the International Summer School for Young Physicists (ISSYP)
2002 – 2005	<b>Supervisor</b> for Undergraduate Mathematics Degree, at Cambridge University
Sept – Nov 2004	<b>Supervisor</b> at the African Institute for Mathematical Studies, South Africa
1998 – 2002	<b>Tutor</b> for high school students.

## Academic & Outreach Experience

Since 2006	<b>Referee</b> for Mod.Phys. Lett., PRL, PLB, JCAP, PRD, NJP, CQG, JPHYS A and Mathematical Review
Fall 2007	<b>Dark matter Outreach video</b> for high school students. Interviewee and scientific advisor.
October 2007	“A moment with Dr. Claudia de Rham”, <b>interview</b> for the Journal of the Royal Astronomical Society of Canada
May 2007	<b>Public Lecture</b> on Extra spatial dimensions, Black Hole session, Perimeter Institute
2006 - 2008	French to English <b>translation</b> of “Cosmologie Primordiale” by J.P. Uzan and P.Peter
2000 – 2001	Involved in outreach at the <b>science museum “Espace des Inventions”</b> (Lausanne). Designed and wrote a pedagogical guide for teachers.

## Recent Talks

Oct. 2009	“ <b>The Accelerating Universe and Dark Energy</b> ”, invited physics colloquium, Kenyon College
Sep. 2009	“ <b>Massive Gravity: A new Way</b> ”, Cern, Cosmo ‘09
Jun. 2009	“ <b>Cascading Gravity and Degravitation</b> ”, Desy, Pascos ‘09
Mar. 2009	“ <b>2 Large Extra Dimensions and the 2 Hierarchy Problems</b> ”, Nordita
Feb. 2009	“ <b>Cascading Gravity and Degravitation</b> ”, Case Western Reserve University, seminar
Jan. 2009	“ <b>Challenging the Cosmological Paradigm</b> ”, Swiss National Foundation, Bern
Dec. 2008	“ <b>Introduction to Cosmology</b> ”, invited review talk for the Young Researchers Conference, Perimeter Institute
Nov. 2008	“ <b>Towards Cosmology in IR Modified Gravity</b> ”, PSI-G workshop, APC, Paris, invited talk

## Visits and Collaborations

Nov 2009	<b>LMU Munich</b> , Arnold Sommerfeld Center, Host: Prof. Stefan Hofmann
Oct 2009	<b>Kenyon College</b> , Ohio, Host: Prof. John Tom GIBLIN
Oct 2009	<b>New York University</b> , Host: Prof. Gregory Gabadadze
April and Aug. 2009	<b>University of Pennsylvania</b> , Host: Prof. Justin Khoury
Feb. and Aug. 2009	<b>Case Western Reserve University</b> , Host: Prof. Glenn Starkman
May and August 2008	<b>Nordic Institute for Theoretical Physics, Stockholm</b> . Host: Prof. Stefan Hofmann
April 2008	<b>Minnesota Department of Physics and Astronomy</b> . Host: Prof. Marco Peloso
February 2008	<b>McGill University</b> . Host: Prof. Robert Brandenberger
November 2007	<b>Tokyo Institute of Technology</b> . Host: Prof. Tetsuya Shiromizu
November 2007	<b>Yukawa Institute, Kyoto</b> . Host: Prof. Jiro Soda
October 2007	<b>Caltech Physics Department</b> , Host: Prof. Mark Wise
October 2007	<b>NYU Soft Condensed Matter Physics Department</b> , work on protein folding. Host: Prof. Jasna Brujic
March 2007	<b>Michigan Center for Theoretical Physics, Ann Arbor</b> . Host: Dr. Sera Cremonini.
September 2005	<b>Tokyo Institute of Technology</b> , JSPS program. Host: Prof. Tetsuya Shiromizu.
April – July 2000	<b>JPL (Jet Propulsion Laboratory), Pasadena</b> , analysis of the outcomes from MGS (Mars Global Surveyor). Host: Dr. Suzan Smerkar.
June 1996 – Sept. 1996	<b>Geophysical Observatory of Tananarive, Madagascar</b> , work in Astronomy and Geophysics

## Grants and Prizes

2009	<b>Swiss National Foundation Professorship Grant</b> for the project "Challenging the cosmological paradigm"
2007 and 2008	<b>Ontario MRI Canadian PDF fellowship</b>
2004	<b>Fellow of the Cambridge Overseas Society</b>
2002, 2003 and 2004	<b>"Irene Hallinan Scholarship"</b> , accorded from Girton College, Cambridge
2000	<b>"Medaille de la Defence National"</b> , Award from the French Polytechnique School
2000	<b>Physics Internship Scholarship</b>
1998 and 1999	<b>Erasmus Scholarship</b>
1998	<b>"Adrien Tschumy" Prize</b> for the highest mark awarded among all students of University

## Personal Interests and Skills Developed

<b>Languages:</b>	<b>French</b> Mother tongue <b>English</b> Fluent <b>German</b> Basic knowledge <b>Spanish</b> Oral comprehension (lived four years in Peru) <b>Russian</b> Beginner
<b>Astronomy:</b>	
Oct. 1999	<b>ESA Congress (European Space Agency), Amsterdam</b> Steady seminars organised for students.
1997 – 1998	<b>Astronomy Association at EPFL: Callista</b> Cofounder of the organisation providing facilities, seminars and supervision in astronomy for members of the university and the general public. Responsible for the organisation of observation sessions and regular seminars.
<b>Horse riding:</b>	
level:	<b>Galop 7</b>
1998 – 2000	Member of the <b>SEM</b> (Section Equestre Militaire) at Ecole Polytechnique de Paris
1986 – 1996	<b>Active rider and show jumping candidate</b>
<b>Scuba Diving:</b>	
level:	<b>Dive Master (DM 211587), dry suit speciality</b> worked for 2 months as a dive master at the Blue Merlin, Lombok, Indonesia CMAS and FFESSM diver (1990), Padi Advanced Open water (2000), Padi Rescue diver (2001), Padi Dive Master (2006), Padi dry suit (2006)
Since 1990	More than 120h of scuba diving experience, including dives in Australia, Canada, Corsica, Galapagos, Indonesia, Florida, Madagascar, Malta, Mauritius, and Switzerland.
<b>Flying:</b>	
Since 2006	<b>Private Pilot (819 855)</b> More than 130h of flight experience on Diamond Katana DA20 and Cessna 172