Swiss Doctoral Program in Mathematics

Universities of Basel, Bern, Fribourg, Geneva, Neuchâtel, and EPF Lausanne

Annual Report Academic Year 2010/11

This report contains information on the **Swiss Doctoral Program in Mathematics**. It covers the period of the academic year 2010/11, with a preview of the following academic year. To benefit from the hyperlinks, please use the online version on **www.math.ch/dp**.

Extended Table of Contents

Swiss Doctoral Program in Mathematics

Universities of Basel, Bern, Fribourg, Geneva, Neuchâtel, and EPF Lausanne

Welcome

Under the label **Swiss Doctoral Program in Mathematics** the departments and institutes of mathematics at the Universities of Basel, Bern, Fribourg, Geneva and Neuchâtel, and EPF Lausanne offer a joint program for doctoral students in mathematics. The program is open to all doctoral students at the mentioned universities and aims to provide a comprehensive spectrum of research and training activities.

By completing the *Swiss Doctoral Program in Mathematics* doctoral students will be provided, in addition to the doctoral degree from the participating university, with a **certificate** of the *Doctoral Program*.

The graduate students are attached to the universities where they are enrolled. In particular, master's and doctoral degrees are issued by the participating universities and are outside the competence of the *Doctoral Program*.

The *Swiss Doctoral Program in Mathematics* consists of participating faculty, graduate students enrolled in the *Doctoral Program*, and post-docs. Participation is voluntary. The *Doctoral Program* permits doctoral students to validate their engagement and to profit from the offers and benefits of the program.

The *Swiss Doctoral Program in Mathematics* was founded in 2006. In a pilot phase till 2008 it was running together with the pre-existing *Ecole doctorale de mathématiques Genève - Neuchâtel*. In 2009, the *Swiss Doctoral Program in Mathematics* had a common budget with the *Troisième cycle Romand de mathématiques* and was fully supported by the *CUSO*.

On January 1, 2010, the Doctoral Program merged with the *Troisième cycle Romand de mathématiques* and runs now under the official label **Programme doctoral en mathématiques de la CUSO**. Please see the archive for the history of the *Troisième cycle*.

Objectives

The aim of the *Swiss Doctoral Program in Mathematics* is to offer an advanced research training in mathematics of high quality and to prepare doctoral students for their future career.

The *Doctoral Program* provides a broad platform for contacts among the mathematical research groups in Switzerland. The synergistic effect initiated by the joint activities represents a major added value complementing the research activities of the participating universities.

The *Swiss Doctoral Program in Mathematics* covers the three following parts:

Education towards research: In a joint effort of the participating research groups at the departments of mathematics at the involved universities the *Doctoral Program* offers an intensive and broad graduate education in mathematics of international format. The program consists of a wide range of graduate courses and research seminars, summer and winter schools. Moreover, special programs are launched that include block-courses given by internationally recognized speakers, and sequences of lectures focusing on recent developments. The program comprises both, activities that provide a good general mathematical background and specialized topics which are related to the research interests of groups of doctoral students. The learning outcome of the doctoral program is the ability to do independent original research in mathematics.

Information: The *Doctoral Program* offers a platform of information about research activities, conferences, the mathematical community, and exchange programs. It also provides information about job opportunities and continuing education.

Career management: The *Doctoral Program* addresses the issue of the professional integration of doctoral students. It serves as a platform to establish contacts with doctoral students of other research groups in Switzerland and offers a challenging and stimulating atmosphere so as to provide young researchers with an excellent base for a professional or research career in mathematics. The offer includes the program of Transferable skills of the CUSO.

Support: The *Doctoral Program* can provide some partial support to doctoral students who participate (actively) in conferences or other scientific activities abroad. The support is limited and subject to the following conditions:

1. The applicant must be registered as a PhD student in mathematics in one of the member universities.
2. The student should give a short description of the conference and his/her motivations for attending.
3. He/she should ask in parallel for some financial support from his advisor and/or institute.
4. He/she should also ask for some support from the organizers of the

conference.

5. A budget should be presented.

The request must be approved by the PhD advisor and a local senior member of the council and sent to the Vice-Director.

Neighboring Schools

The *Swiss Doctoral Program in Mathematics* collaborates with

- The Zurich Graduate School in Mathematics
- Ecole doctoral de l'EPFL

Reciprocity agreement between the Zurich Graduate School in Mathematics and the Swiss Doctoral Program in Mathematics: PhD Students which are enrolled in either school are entitled to participate in activities of the other school. A request for reimbursement of travel or other costs can only be filed with the own school according to its rules.

A similar agreement with the *Ecole doctoral de l'EPFL* is currently under negotiation.

Spectrum of Activities

The *Doctoral Program*

- offers courses in all areas of mathematics at graduate and research level,
- organizes workshops and block-courses in which experts present advanced topics and work with the doctoral students,
- organizes workshops and seminars where the doctoral students present in an accessible way the context and the progress of their own research in a talk or by a poster,
- encourages doctoral students to participate actively in international conferences,
- proposes complementary training in scientific English, computer science, scientific writing and presentation technique,
- prepares and stimulates the transition of the doctoral students to the professional life in industry, administration or in academia,
- sets up a network of information relevant to doctoral students for succeeding in their thesis and in their career planning.

Activities of the *Doctoral Program* include the following events primarily targeted at the graduate student audience:

- **Graduate courses:** in general, these are special courses at the graduate level given over the period of one semester, or more concentrated courses having around 20 teaching hours. Graduate courses have a flexible format: they can be given by one or several teachers, and they can be offered once a week or they can be organized in intensive modules dispatched over one-week periods.
- **Summer/Winter Programs:** these are one-week events which bring together graduate students and leading experts in their respective fields. Typically, the invited speakers present several mini-courses, and there is a possibility for informal discussions with graduate students.
- **Graduate Colloquium:** this is an opportunity for graduate students to present their own work in front of a friendly audience. Such events can be organized in particular topics, as well as at the interdisciplinary level (between different fields of mathematics).
- **Other Events** can be organized at the request of the members of the *Doctoral Program*, if the committee finds them suitable.

Every year, the *Doctoral Program* organizes a list of events where doctoral students are encouraged to participate and to earn credits. Each event is assigned a certain number of credits depending on its length and content.

Below we list more particular targets of the *Doctoral Program* which are not currently covered by the *3e Cycle Romand*:

- To offer a choice of advanced graduate courses in various fields of mathematics (similar to American graduate schools). These courses will be addressed to graduate students in the beginning of their studies. The

main purpose is to provide an up to date background in the major fields of mathematics to the graduate students participating in the *Doctoral Program*.

- To organize two-day meetings within the Graduate Colloquium. These meetings will give an opportunity to doctoral students to present their research area to other doctoral students and their results to experts in the respective fields.
- To organize Summer/Winter Schools in case the offer of such schools is not sufficient. The topic can vary and it will be chosen according to the research topics of graduate students participating in the *Doctoral Program*.

On a smaller scale, the *Doctoral Program* addresses the issues of marketing of scientific research and of the professional integration of doctoral students. In particular, the following issues should be touched upon in the format of lectures or workshops:

- How to write articles in mathematics (what is an introduction, how to compose the bibliography etc.)?
- How to make a presentation (in particular, in English)?
- How to use a computer in mathematical research?
- How to write a CV, and how to prepare a job interview?

Responsibilities

The activities of the *Doctoral Program* are planned by the ***Council*** and directed by the ***Committee***. The ***Secretary*** takes care of the accounting and registers the students achievements.

The *Council* is composed of **two faculty members** and **one PhD student (plus a substitute)** from each university participating in the *Doctoral Program*. The Director of the *Ecole doctoral de l'EPFL* is a permanent invitee in the *Council*.

The responsibilities of the *Council* are as follows:

- To plan activities of the *Doctoral Program* and to coordinate the activities with other graduate schools. The program of activities is prepared and announced for each academic year.
- To elect the *Committee* among its members.

The *Council* can delegate part of its responsibilities to the *Committee* who runs the activities of the *Doctoral Program* in the periods between the meetings of the *Council*.

The *Committee* is composed of a **Director**, a **Vice Director**, and a **PhD student**. The Directors are faculty members.

The responsibilities of the *Committee* are as follows:

- To distribute the budget of the *Doctoral Program* between different activities.
- To approve applications of graduate students for entering the *Doctoral Program* and for participation in various activities.
- To assign credits to graduate students for successful participation in the activities of the *Doctoral Program* or in other activities in mathematics at the graduate level.

Faculty members of participating institutions are entitled and invited to submit proposals to the *Doctoral Program Committee*.

Committee

Director
Bruno Colbois
Institut de Mathématiques
Université de Neuchâtel
Rue Emile Argand 11
Case postale 158
CH-2009 Neuchâtel (Switzerland)
Phone ++41 (0)32 718 28 08
Fax ++41 (0)32 718 28 01
e-mail bruno.colbois@unine.ch

Vice Director
Marc Troyanov
IGAT-Institut de Géométrie, d'Algèbre et de Topologie
Bâtiment BCH
EPFL
CH-1015 Lausanne (Switzerland)
Phone ++41 (0)21 693 54 21
Fax ++41 (0)21 693 03 85
e-mail marc.troyanov@epfl.ch

PhD Student Representative
Lev Kiwi
Department of Mathematics
University of Fribourg
Chemin du Musée 23
CH-1700 Fribourg (Switzerland)
Phone ++41 (0)26 300 92 03
Fax ++41 (0)26 300 97 44
e-mail lev.kiwi@unifr.ch

Former Directors

- 2006-2010: Norbert Hungerbühler (founding director)

Senior Council Members

University	Council Members	
Basel	Hanspeter Kraft	Jérémy Blanc
Bern	Sebastian Baader	George Metcalfe
Fribourg	Anand Dessai	Ruth Kellerhals
Geneva	Anton Alekseev	Andras Szenes
Neuchâtel	Bruno Colbois*	Alain Valette
EPF Lausanne	Eva Bayer	Marc Troyanov**
Ecole doctoral EPFL	Friedrich Eisenbrand***	

*Director and **Vice Director of the *Doctoral Program*
***Director of the *Ecole doctoral de l'EPFL* (permanent invitee)

Junior Council Members

University	Council Member	Substitute
Basel	Immanuel Stampfli	NN
Bern	Claudio Somaini	NN
Fribourg	Florence Yerly	Chrystel Feller
Geneva	David Albertani	NN
Neuchâtel	Bastien Marmet	NN
EPF Lausanne	Caroline Lassueur	Laura Vinckenbosh Daniel Arnold Moldovan

Secretary

Our Secretary takes care of the accounting and registers the students achievements.

Accounting
Claudia Kolly
Université de Fribourg, Pérolles
Département de mathématiques
Chemin du Musée 23
CH-1700 Fribourg (Switzerland)
Phone ++41 (0)26 300 91 79
Fax ++41 (0)26 300 97 44
e-mail claudia.kolly@unifr.ch

Enrollment: General

The participation in the *Doctoral Program* is voluntary for both, faculty and doctoral students. However it is recommended. All doctoral students of the participating universities and all faculty members and post-docs have access to the activities of the *Doctoral Program* and are invited to participate actively. Enrolled doctoral students are entitled to apply for **refund of costs** for the successful participation in activities of the *Doctoral Program* and for travel grants (see Support).

Enrollment of a doctoral student in the *Doctoral Program* ends with the conferral of the doctorate and is limited to five years. Participating doctoral students are usually employed as assistants at one of the affiliated universities or hold a scholarship of the National Science Foundation or of other sources.

Scoring

The participation of a doctoral student in the *Doctoral Program* is validated by ECTS points. A doctoral student must acquire a minimum of **30 ECTS points** to be entitled to receive the certificate of the *Doctoral Program*. A doctoral student can earn credit points as follows:

1. By following and validating a course which is approved by the *Doctoral Program* (3 ECTS points)
2. By participating and validating a workshop, block-course or conference approved by the *Doctoral Program* (3 ECTS points)
3. By presenting the context and the progress of the own research within the framework of a colloquium (3 ECTS points)
4. By presenting a scientific topic different from the own research within the framework of a colloquium (3 ECTS points)
5. By participating in a complementary training in scientific English, computer science, scientific writing or presentation technique, or by organizing a scientific activity within the framework of the *Doctoral Program* (1 ECTS = 25 hours of work)
6. For a doctoral student working as an assistant, a maximum of 6 ECTS points can be obtained by fulfilling his teaching obligations. This maximum corresponds to the teaching load of a half-time assistant during four years.

A minimum of 9 ECTS points must be acquired in the first category, and at least 6 ECTS points in each of the categories 2 and 3.

Each doctoral student is guided by an advisor, usually a professor of one of the affiliated universities. Of course, *thèses en co-tutelle* and co-direction of a thesis is possible. The doctoral student develops a research activity and is supposed to obtain results that lead to the granting of a doctorate at the respective university.

Application of Students

A PhD student in mathematics at one of the affiliated universities can enroll for the *Doctoral Program* by filling the following form. A confirmation is sent by e-mail to the applicant and his or her thesis advisor.

Name *

First name *

University *

E-Mail *

Homepage

Thesis advisor *

E-Mail of thesis advisor *

$e^{i\pi} + 1 =$ please enter the result to prove that you are not a robot.

Submit

* = required fields

Registration research groups

Professors and lecturers of the affiliated universities can register with the *Swiss Doctoral Program in Mathematics*. By doing so, your name, research group and area will be listed on the member's page of the *Doctoral Program*. This promotes your research and makes your group attractive for young PhD students, and you express your support to the *Doctoral Program*. A confirmation of your registration is sent by e-mail.

Name *

First name *

University *

E-Mail *

Homepage

Research field(s) *

$e^{i\pi} + 1 =$ please enter the result to prove that you are not a robot.

Submit

* = required fields

Validation

Doctoral students who are registered with the *Swiss Doctoral Program in Mathematics* can validate an activity by sending the validation form to the Secretary of the program.

Download the validation form.

To earn the credits one needs to satisfy certain criteria, e.g. to pass a test/exam for graduate courses, to give a talk at the Graduate Colloquium, or to take an active part in a Summer/Winter School etc. Upon prior request, the Director of the *Doctoral Program* can accept credits earned in the activities organised by other graduate schools in mathematics or other institutions.

Upon reception and verification of the form, the ECTS points associated with the activity are credited to the student's account.

Please attach the reimboursement form in case you apply for refund of costs. And please keep a copy of the form with your records.

Swiss Doctoral Program in Mathematics

Universities of Basel, Bern, Fribourg, Geneva, Neuchâtel, and EPF Lausanne

Validation Form

I have participated in the following activity of the *Doctoral Program*:

Title: .....

.....

Date: .....

My name: .....

Course instructor: .....

I would like to credit the ECTS points associated with this activity for the following category (see below for the list of categories).

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

Signatures

PhD student: .....

Course instructor: .....

Thesis advisor: .....

Scoring rules: The participation of a doctoral student in the *Doctoral Program* is validated by ECTS points. A doctoral student must acquire a minimum of 30 ECTS points to be entitled to receive the certificate of the *Doctoral Program*. A doctoral student can earn credit points as follows:

1. By following and validating a course which is approved by the *Doctoral Program* (3 ECTS points).
2. By participating and validating a workshop, block-course or conference approved by the *Doctoral Program* (3 ECTS points),
3. By presenting the context and the progress of the own research within the framework of a colloquium (3 ECTS points).
4. By presenting a scientific topic different from the own research within the framework of a colloquium (3 ECTS points).
5. By participating in a complementary training in scientific English, computer science, scientific writing or presentation technique, or by organizing a scientific activity within the framework of the *Doctoral Program* (1 ECTS point = 25 hours of work).
6. For a doctoral student working as an assistant, a maximum of 6 ECTS points can be obtained by fulfilling his or her teaching obligations. This maximum corresponds to the teaching load of a half-time assistant during four years.

A minimum of 9 ECTS points must be acquired in the first category, and at least 6 ECTS points in each of the categories 2 and 3.

Please send this form to the Secretary of the program: www.math.ch/dp/committee/doctoral-students

Reimbursement

Doctoral students who are registered with the *Swiss Doctoral Program in Mathematics* can apply for reimboursment of travel costs connected to the participation and validation of an activity of the *Doctoral Program* by sending the reimbursement form to the Secretary of the program.

Please send the form, including original receipts, before December 10th of each year. Download the reimbursement form (only valid if attached to the validation form for the same activity).

Consider the following guidelines:

- Guidelines for reimbursement
- Summary of the management directive of the CUSO

Please observe that for validation and reimbursement of external activities which are not listed on the program of the *Swiss Doctoral Program in Mathematics* the procedure for Support applies.

CUSO
CONFÉRENCE UNIVERSITAIRE
DE SUISSE OCCIDENTALE

ORDRE DE REMBOURSEMENT DE FRAIS À UN-E PARTICIPANT-E [1)]

3e cycle/programme doctoral :	
Année :	Projet nº :
Intitulé :	
Lieu de l'activité :	
Dates : du	au

Participant-e :	
Nom :	
Prénom :	
Adresse :	
Institution d'attache :	
Statut :	(professeur-e, assistant-e, étudiant-e, etc.)

Date	Trajet	Prix du déplacement [2)]	Frais de repas ou séjour [3)]	TOTAL (CHF)	Visa de l'enseignant-e
			TOTAL		

VERSEMENT POUR :

Nom, Prénom

☐ Compte postal IBAN nº

☐ Banque en CH, nom et lieu

IBAN nº

Date :

Signature du/de la participant-e :

Visa du/de la président-e :

1) Les frais de participation ne peuvent être remboursés qu'à des membres d'une haute école ou institution partenaire pour la discipline (v. directives de gestion)

2) Déplacement selon 1/2 tarif CFF 2e classe

3) Repas seul : maximum CHF 25.– (joindre justificatifs)
Séjour + repas : maximum CHF 120.– par jour, pension complète (joindre justificatifs)

Reporting

The progress of graduate students within the *Doctoral Program* is evaluated each year by the *Doctoral Program Committee* or the *Director* on the basis of the credits obtained by doctoral students. The *Doctoral Program* works in close contact with the thesis advisors of the graduate students. In particular, the progress evaluation is communicated to the thesis advisors.

Doctoral students submit **yearly a report** documenting their activities related to the *Doctoral Program*. They can include a summary of their research results. The report is to be sent at the end of the academic year to the Director of the program.

Upon conferral of your doctorate please send a notice to the same address with your postal address. You will then receive your **certificate** of the *Doctoral Program*.

Program of the academic year 2010/2011

Link to the program of the academic year 2006/2007, 2007/2008, 2008/2009, 2009/2010.

Please consider also the program Transferable skills of the CUSO, and StartingDoc.

COLOR CODE GUIDE
Recommended for all doctoral students
Recommended for all doctoral students working in the field
Recommended for advanced doctoral students working in the field

Graduate Course of the III Cycle: Autour des problèmes de Linnik
Prof. Philippe Michel (EPFL)
Fall term 2010, Wednesdays, 11:15 - 12:30, beginning: September 22.
Place: EPFL, room ODY 0 16

Graduate Course of the III Cycle: Homologie de Floer et applications
Prof. Felix Schlenk (Neuchâtel)
Fall term 2010, Wednesdays, 14:15 - 15:30, beginning: September 22.
Place: EPFL, room GR A3 31

Graduate Course of the III Cycle: Introduction to complex analysis in several variables
Prof. Frank Kutzschebauch (Bern)
Fall term 2010, Wednesdays, 15:45 - 17:00, beginning: September 22.
Place: EPFL, room GR A3 31

Course: Excursion with the free loop-space
Prof. Gregory Lupton (Cleveland State University)
Fall term 2010, Mondays, 10:15 - 11:45 and 14:15 - 15:45, beginning: November 8.
Place: EPFL, room MA 12 (a.m.) and MA 10 (p.m.)
Informations: K. Hess (EPFL)

Optimal transport, Ricci curvature and application to probability

Erwan Hillion (Neuchâtel)
Tuesday November 9, 16 and 30, 2010, from 10:30 to 13:30 (with a break at the middle!)
Place: Neuchâtel, Institute of Mathematics, Auditorium B 217

Seminar: Geometry and Dynamics in Negative Curvature
Last talks of the seminar: Gilles Courtois: Uniform growth of groups acting on Cartan-Hadamard spaces I,II Neuchâtel, 18.11.2010 at 13.30 and 19.11.2010 at 16.30, B 217. Marc Peigné : Exposant critique et série de Poincaré I,II Neuchâtel, 25.11.2010 at 13.30 and 16.15, B 217.
Organization: Bruno Colbois, Felix Schlenk (Neuchâtel)

Mini-course on Game Theory: announcement, abstract
Prof. Jörgen Weibull (Stockholm School of Economics)
January 24, 2011, from 13.30 till 15.30 (slides: lecture 1) January 26, 2011, from 10.00 till 12.00 (slides: lecture 2A, lecture 2B)
Place: Neuchâtel, Faculty of Sciences, Rue E Argand 11, Room B. 013

Birational geometry (intensive lecture)
Les Diablerets, January 24-28, 2011
Informations: J. Blanc (Basel)

Regards croisés sur les actions de groupes en géométrie
Neuchâtel, February 7-9, 2011
Place: Neuchâtel, Institute of Mathematics, building B, 2nd floor, map List of participants
Informations: B. Colbois (Neuchâtel)

Seventh Graduate Colloquium
Lausanne, February 17-18, 2011
Place: EPFL, room MA 30
Organization: Caroline Lassueur and Daniel Moldovan

Journée Georges de Rham
Lausanne, March 9, 2011
Speakers: Mikhail Kapranov (Yale University); Don Zagier (MPI Bonn & Collège de France)
Place: EPFL, room CM 1
Organization: A. Karlsson (Geneva)

Advanced course: Groups, languages and automata
Prof. Sarah REES (Newcastle)

2011, March 11, 17, 18, 31; April 1st, 7, 8; each time from 2PM to 4PM
Neuchâtel, Institut de Mathématiques, UniMail, 11 Rue Emile Argand, Room B217

Journée de printemps de la SMS: Algebra & Coalgebra Meet Proof Theory
Introductory lectures for doctoral students on April 27
Bern, April 27-29, 2011
Informations: G. Metcalfe (Bern)

Second Workshop on CR, Pseudo-Hermitian and Sasaki Geometry
Introductory lectures for doctoral students on Mai 3
Neuchâtel, Mai 3-5, 2011
Informations: M-A. Lawn (Neuchâtel)

Memorial Michel André
Introductory lectures for doctoral students on Mai 11 and 12
EPFL, Mai 11-15, 2011
Informations: K. Hess (EPFL)

Séminaire Kervaire: Mathematical Theory of Quantum Networks
Les Diablerets, June 6-10, 2011
Informations: C. Tretter (Bern)

Young Topologists Meeting 2011
EPFL, June 14-18, 2011
Organization: Eric Finster, Varvara Karpova and Marc Stephan

Séminaire Borel: Topics in Real and Complex Hyperbolic Geometry
Les Diablerets, August 22-26, 2011
Informations: R. Kellerhals (Fribourg)

Eighth Graduate Colloquium
Basel, September 8-9, 2011
Place: Basel, Mathematisches Institut
Organization: Christian Graf and Immanuel Stampfli

Graduate Course of the III Cycle: Metric embeddings in Hilbert and Banach spaces
Prof. Alain Valette (Neuchâtel)
Fall term 2011, Wednesdays, 11:15 - 12:30, beginning: September 21

Place: EPFL, room CM 013

Graduate Course of the III Cycle: Train Tracks, Thurston and Teichmueller Theory
Prof. Sebastian Baader (Bern)
Fall term 2011, Wednesdays, 14:00 - 15:15, beginning: September 21
Place: EPFL, room MA 10

Graduate Course of the III Cycle: Floer homology with applications II
Prof. Felix Schlenck (Neuchâtel)
Fall term 2011, Wednesdays, 15:45 - 17:00, beginning: September 21
Place: EPFL, room MA 10

Journée Georges de Rham

The *Journée Georges de Rham* has been introduced in 1991 by the *Troisième cycle Romand de mathematiques* and usually takes place at EPF Lausanne. It convenes mathematicians not only of the CUSO universities, but also from the whole of Switzerland and from abroad and stimulates interaction between professors, postdocs and PhD students. The organisers invite two speakers of international reputation who present their vision of contemporary mathematics and of future developments. A particular aim is to offer doctoral students a modern high class perspective of mathematical sciences and to establish contacts on an international level and with other research groups.

2011 **Mikhail Kapranov** (Yale University)
Formal loops and chiral differential operators
Don Zagier (MPI Bonn & Collège de France)
From mock theta functions to black holes

2010 **Luigi Ambrosio** (Scuola Normale Superiore di Pisa)
Surface measures in Euclidean spaces, Carnot groups and Wiener space
Alexander Bobenko (Technische Universität Berlin)
Discrete Differential Geometry: Theory and Applications

2009 **Curtis McMullen** (Harvard University)
Billiards and moduli space
Peter Sarnak (Princeton University)
The affine linear sieve

2008 **Jean-Christophe Yoccoz** (Collège de France)
Dynamique et Géométrie des échanges d'intervalles
Gang Tian (Princeton University)
Geometry and Analysis of low dimensional Manifolds

2007 **László Lovász** (Microsoft research USA)
The limit of a growing graph sequence
Benoît Mandelbrot (Yale, USA)
Fractales et multifractales : survol et quelques résultats récents

2006 **Jean-Pierre Serre** (Collège de France)
Le "nombre de points mod m" d'une variété algébrique
Akshay Venkatesh (MIT)
p-adic dynamics and representations by quadratic forms

2005 **Morris Hirsch** (UC Berkeley)
Actions of Lie algebras and Lie groups on surfaces
Benjamin Weiss (University of Jerusalem)
Recent developments in the ergodic theory of amenable group actions

2004 **Marcus du Sautoy** (Oxford)
Through the looking glass: groups from a number theoretic

perspective
Robert Ghrist (Urbana-Champaign)
Knotted Flowlines

2003 **Martin R. Bridson** (Imperial College London)
The geometry of the word problem
Marcel Berger (IHES)
Dynamiser la géométrie élémentaire : introduction aux travaux de Richard Schwartz

2002 **Valentin Poénaru** (Université Paris-Sud, Orsay)
Problèmes de Topologie en petite dimension
John Milnor (SUNY at Stony Brook)
Is there a science of complexity?

2001 **Antonio Ambrosetti** (SISSA, Trieste)
Perturbation in critical point theory and applications to nonlinear differential equations
Stuart Antman (University of Maryland at College Park)
Analytic consequences of incompressibility in mechanics

2000 **Jean Bellissard** (Université Paul Sabatier, Toulouse)
La géométrie non commutative des solides apériodiques
Etienne Ghys (Ecole Normale Supérieure, Lyon)
La structure des feuilletages holomorphes

1999 **Jürg Fröhlich** (ETH Zürich)
Supersymmetry and Differential Geometry
Daniel Sternheimer (Université de Dijon)
La cohomologie de de Rham des variétés symplectiques : un classifiant des quantifications

1998 **Dieter Kotschick** (Universität München)
Signatures, monopoles and mapping class groups
Michel Brion (Université de Grenoble I)
Formule sommatoire d'Euler MacLaurin pour les polytopes convexes rationnels

1997 **Shahar Mozes** (Hebrew University)
Products of trees, lattices and simple groups
Gilles Pisier (Texas A&M University)
Probllèmes de similarité et applications complètement bornées

1996 **Rémi Langevin** (Université de Bourgogne)
Géométrie intégrale
Ian Hambleton (McMaster University)
Topological equivalence of linear representations

1994 **Michèle Audin** (Université de Strasbourg)
Matrice de Jacobi
Jean-Benoit Bost (IHES)
Courants de Green et géométrie arithmétique

1993 **Jean-Pierre Demailly** (Grenoble)
Méthodes analytiques récentes et géométrie algébrique
Vaughan Jones (Berkeley and Geneva)
Groupes de lacets et algèbres d'opérateurs

1992 **Jacques Tits** (Collège de France)

Peter Hilton (Binghamton University)

1991 **Alain Connes** (IHES, Paris)
La notion d'espace géométrique et le modèle standard
Raoul Bott (Harvard)
Aspects of torsion: old and new

Recommended external Activities

- Zurich Graduate School in Mathematics
- Ecole doctorale de l'EPFL

Advanced Courses 2010/11

Specific courses which are held in the framework of a master program are also qualified for PhD students. Such courses can be announced on this page using the usual form and are thereby open for all PhD students participating in the Doctoral Program. In order to minimize travelling, it is recommended to organize such courses in a bi-weekly rhythm or as block courses.

Link to the advanced courses of the academic year 2006/2007, 2007/2008, 2008/2009, 2009/2010.

Graduate Course of the III Cycle: Autour des problèmes de Linnik
Prof. Philippe Michel (EPFL)
Fall term 2010, Wednesdays, 11:15 - 12:30, beginning: September 22.
Place: EPFL, room ODY 0 16

Graduate Course of the III Cycle: Homologie de Floer et applications
Prof. Felix Schlenk (Neuchâtel)
Fall term 2010, Wednesdays, 14:15 - 15:30, beginning: September 22.
Place: EPFL, room GR A3 31

Graduate Course of the III Cycle: Introduction to complex analysis in several variables
Prof. Frank Kutzschebauch (Bern)
Fall term 2010, Wednesdays, 15:45 - 17:00, beginning: September 22.
Place: EPFL, room GR A3 31

Advanced course: Groups, languages and automata
Prof. Sarah REES (Newcastle)
2011, March 11, 17, 18, 31; April 1st, 7, 8; each time from 2PM to 4PM
Neuchâtel, Institut de Mathématiques, UniMail, 11 Rue Emile Argand, Room B217

Graduate Course of the III Cycle: Metric embeddings in Hilbert and Banach spaces
Prof. Alain Valette (Neuchâtel)
Fall term 2011, Wednesdays, 11:15 - 12:30, beginning: September 21
Abstract: In the last years, there was a remarkable convergence between three seemingly remote fields of mathematics: theoretical computer science, geometry of Banach spaces, K-theory of C^*-algebras. The common theme is embeddings of discrete metric spaces into

Hilbert or Banach spaces. Learning of techniques from other fields allowed for mutual cross-fertilization, and it is the purpose of this set of lectures to present some recent developments in this fascinating subject.

Table of contents:
1. Motivation I: computer science (from the Sparsest Cut problem to the Goemans-Linial conjecture, to the discrete Heisenberg group)
2. Motivation II: topology (from embeddings into Hilbert spaces to the Novikov conjecture, after G. Yu)
3. Distortion for embeddings of finite metric spaces: Bourgain's upper bound.
4. Metric spaces hard to embed: expander graphs.
5. The group connection: equivariant embeddings and the role of amenable groups.

Place: EPFL, room CM 013

Graduate Course of the III Cycle: Train Tracks, Thurston and Teichmueller Theory

Prof. Sebastian Baader (Bern)

Fall term 2011, Wednesdays, 14:00 - 15:15, beginning: September 21

Abstract: The purpose of this course is to dive into the exciting realm of geometric topology.
Classical Teichmueller theory is about hyperbolic structures on surfaces of negative Euler characteristic. As we will see, hyperbolic metrics are characterised by the set of lengths they admit on closed curves. This naturally leads to Thurston's compactification of Teichmueller space, whose new objects are measured foliations. Using these, we will derive Thurston's classification of surface mapping classes into three types: periodic, reducible and pseudo-Anosov.
In practice, measured foliations are most efficiently described via train tracks. We will spend sometimes on constructing these, following a recent approach by Gerber.
On our way, we are going to discover various classical theorems, e.g. Hurwitz' 84(g-1) Theorem, Nielsen's realisation problem, and the theory of fibred knots and links.

Place: EPFL, room MA 10

Graduate Course of the III Cycle: Floer homology with applications II

Prof. Felix Schlenck (Neuchâtel)

Fall term 2011, Wednesdays, 15:45 - 17:00, beginning: September 21

Abstract: The goal of the course is to construct symplectic and Lagrangian Floer homology, and to show how these two homologies can be used to solve problems in symplectic topology and Hamiltonian dynamics.
This is a sequel of the course given last year. I will therefore assume that the audience is familiar with Morse theory and Morse homology. (Though, these topics will be sketched again in one or two lectures). I will then give the geometric and topological parts of the construction of symplectic and Lagrangian Floer homology, with some, but not all, analytical details.
In the second half of the course these theories will be applied to prove several existence results for closed orbits in Hamiltonian systems (Arnold and Weinstein conjectures), to give lower bounds on the topological entropy of classical Hamiltonian systems, and to give some results on Lagrangian intersections.

Place: EPFL, room MA 10

Doctoral Student's Page academic year 2010/11

On this page, all Doctoral Students of the *Doctoral Program* can announce their own talks, presentations, mini-courses etc. To do so, please fill in the corresponding form.

Link to the doctoral student's page of the academic year 2006/2007, 2007/2008, 2008/2009, 2009/2010.

Régis Straubhaar (Neuchâtel)

Lecture at the seventh Graduate Colloquium of the Swiss Doctoral Program, EPFL
17.2.2011, 10:00: **Numerical Optimization of a Laplacian-Dirichlet's eigenvalue with respect to the domain**
Abstract: Given a bounded planar domain, we consider the eigenvalues of the Laplacian with Dirichlet boundary conditions. The question to know which shape (if any !) minimizes a given eigenvalue is an old one : it was conjecture in 1877 by Rayleigh (and proved in 1923 by Faber and Krahn) that the disc is the unique minimizer for the first eigenvalue. Shortly after this, Krahn and Szegö proved that the second eigenvalue is minimized by the union of two identical discs. However, for all other eigenvalues of the Dirichlet-Laplacian, the minimizer is unknown. This naturally leads to the use of finite element methods to approximate a minimizing domain.

Nicolai Hähnle (EPFL)

Lecture at the seventh Graduate Colloquium of the Swiss Doctoral Program, EPFL
17.2.2011, 11:15: **Efficiency of linear programming and the polynomial Hirsch conjecture**
Abstract: Linear programming is the problem of finding the maximum of a linear function over a polyhedron. It is widely used in practice and has been very successfully applied in solving combinatorial optimization problems as well as in approximation algorithms. The Simplex method for linear programming proceeds by walking from vertex to vertex of the polyhedron, thus connecting questions about the efficiency of linear programming to questions about the geometry of polyhedra. The polynomial Hirsch conjecture claims that the diameter of the vertex-edge graph is bounded by a polynomial in the number of defining inequalities and the dimension. I will report recent results on both the efficiency of the simplex method as well as the polynomial Hirsch conjecture.

Georges Klein (Fribourg)

Lecture at the seventh Graduate Colloquium of the Swiss Doctoral Program, EPFL
17.2.2011, 13:30: **Linear barycentric rational interpolation from equispaced samples and applications**
Abstract: Efficient linear and infinitely smooth approximation of functions from equispaced samples is an important problem in practice. Runge showed in 1901 that it is not delivered by the interpolating polynomial. In 2007, Floater and Hormann have introduced a family of linear barycentric rational interpolants which extend a construction by Berrut from 1988. These interpolants yield high theoretical rates of convergence, which depend on the smoothness of the approximated function. We will present these rational interpolants as well as a further extension and look at their condition and some of their applications to differentiation and integration.

David Frenkel (Neuchâtel)

Lecture at the seventh Graduate Colloquium of the Swiss Doctoral Program, EPFL
17.2.2011, 14:45: **Symplectic embedding problems and Gromov's non-squeezing theorem**
Abstract: We will talk about the problem of embedding symplectically an open set of an Euclidean space of even dimension into anoter one. In particular, we will present Gromov's non-squeezing theorem, that gives a necessary and sufficient condition to embed symplectically a ball in a symplectic cylinder. Finally, we will try to give an idea of the proof of the theorem using some symplectic invariants, called symplectic capacities.

Kristin Shaw (Geneva)

Lecture at the seventh Graduate Colloquium of the Swiss Doctoral Program, EPFL
17.2.2011, 15:00: **Obstructions to lifting tropical curves in complements of hyperplane arrangements**
Abstract: The tropicalisations of complements of hyperplane arrangements are known as Bergman fans and have a very combinatorial description. In this talk I will study tropical curves contained in these fans. First I will show how to intersect curves and explain how this relates to the intersection product of actual complex curves. Finally, I will present some obstruction theorems to lifting tropical curves in surfaces that arise from this intersection product. This talk is based on joint work in progress with Erwan Brugallé.

Rafael Benedikt Andrist (Bern)

Lecture at the seventh Graduate Colloquium of the Swiss Doctoral Program, EPFL
18.2.2011, 9:00: **Stein Manifolds Characterized by their Endomorphisms**
Abstract: Stein manifolds admitting a proper holomorphic embedding of the complex line are characterized, among all complex manifolds, by their holomorphic endomorphism semigroup in the sense that any semigroup isomorphism induces either a biholomorphic or an antibiholomorphic map between them. Several classes of Stein manifolds admitting a proper holomorphic embedding of the complex line are described.

Bruno Duchesne (Geneva)

Lecture at the seventh Graduate Colloquium of the Swiss Doctoral Program, EPFL
18.2.2011, 10:15: **Dynamics of isometries of nonpositively curved spaces**
Abstract: nonpositively curved space is a geodesic metric space such that any triangle is thinner than an euclidean one. Simply connected riemannian manifolds provide a large class of examples. We will aim to understand the dynamical behaviour of isometries of such spaces. A lot of examples will be described to improve our intuition. Moreover, we will pay our attention on the differences between finite dimensional case and infinite dimensional case.

Loren Coquille (Geneva)

Lecture at the eighth Graduate Colloquium of the Swiss Doctoral Program, Basel
8.9.2011, 11:30: **Gibbs measures of the 2d Ising model**
Abstract: In the late 1970s, in two celebrated papers, Aizenman and Higuchi independently established that all infinite-volume Gibbs measures of the 2d Ising model are a convex combination of the two pure phases. After introducing the relevant definitions and concepts needed to understand the physical content of this result, I will present a new approach to it, with a number of advantages:
(i) a finite-volume, quantitative analogue (implying the classical claim) is obtained;
(ii) the scheme of the proof seems more natural and provides a better picture of the underlying physical phenomenon;
(iii) this new approach seems substantially more robust (possible extension to the Potts model).
This is a joint work with Yvan Velenik.

Matey Mateev (Basel)

Lecture at the eighth Graduate Colloquium of the Swiss Doctoral Program, Basel
8.9.2011, 14:00: **Hyperplane sections and degree matrices**
Abstract: If V is a subscheme of P^n and F is a general hypersurface of degree d, then F cuts out on V a subscheme $Z = V \cap F$, which is also a subscheme of F. A natural and interesting question is to study the properties that either Z or V transfers to the other. In this talk we will discuss this problem and will show how to construct a curve C in P^3 whose general hyperplane section $Z = C \cap L$ in P^2 has a given degree matrix.

Aleksandr Kolpakov (Fribourg)

Lecture at the eighth Graduate Colloquium of the Swiss Doctoral Program, Basel
8.9.2011, 15:20: **Right-angles, hyperbolicity and dimension**
Abstract: Right-angled polyhedra turn out to be an interesting family of (almost) hyperbolic polytopes. They are connected with other various problems and notions, e.g. right-angled Coxeter groups, Loebell manifolds, combinatorial volume estimates and decompositions of acute-angled polyhedra, dimension bounds. In my talk, a survey on the main part of this zoo will be given together with a brief explanation of what I'm doing.

Bastien Marmet (Neuchâtel)

Lecture at the eighth Graduate Colloquium of the Swiss Doctoral Program, Basel
8.9.2011, 16:40: **Quasi-stationary distributions for stochastic approximation algorithms with constant step size**

Immanuel Stampfli (Basel)

Lecture at the eighth Graduate Colloquium of the Swiss Doctoral Program, Basel
9.9.2011, 9:30: **On the topologies on ind-varieties**
Abstract: In the 1960s Shafarevich introduced ind-varieties in order to explore some naturally occurring groups that allow the structure of an infinite-dimensional analogon of an algebraic group (such as the group of polynomial automorphisms of ^{n}). Shafarevich defined an ind-variety as the successive limit of an increasing chain

$$X_1 \subseteq X_2 \subseteq X_3 \subseteq \ldots$$

of varieties X_n, each one closed in the next. There are essentially two ways of endowing such an ind-variety with a topology. One topology is naturally induced by the increasing chain of varieties and is due to Shafarevich. The other is naturally induced by the regular functions on the ind-variety and is due to Kambayashi. These topologies differ on a rather large class of ind-varieties. The aim of this talk is to give an idea of the proof of this result.

Peter Feller (Bern)

Lecture at the eighth Graduate Colloquium of the Swiss Doctoral Program, Basel
9.9.2011, 11:00: **Gordian distance, torus knots and three variants of adjacency**
Abstract: We define classical knots and explain how they form a discrete metric space with respect to the Gordian distance. Then we give different descriptions of the subspace of torus knots. Finally we introduce three notions of adjacency for torus knots and conclude with some examples of Gordian adjacency and some of our questions.

Iulian Ion Simion (EPFL)

Lecture at the eighth Graduate Colloquium of the Swiss Doctoral Program, Basel
9.9.2011, 13:30: **Witt groups in linear algebraic groups**
Abstract: After a description of Witt groups I will show how they play a role in my current work namely in studying the centralizer of unipotent elements in linear algebraic groups for small characteristic. We will describe how one constructs such subgroups with

examples both in the classical and exceptional cases.

Maike Massierer (Basel)

Lecture at the eighth Graduate Colloquium of the Swiss Doctoral Program, Basel
9.9.2011, 11:30: **Trace zero varieties in cryptography**
Abstract: Elliptic curves defined over finite fields are one of the most important types of groups used in cryptography today. Trace zero varieties arise from certain subgroups of such elliptic curves, namely those points of trace zero. They are interesting from a constructive point of view, because they allow fast arithmetic, and also from a cryptanalytic point of view, since the security of many cryptographic protocols is directly linked to the properties of these varieties. For both constructive and destructive use of trace zero varieties, it is important to be able to efficiently represent their elements. We discuss the geometric construction that leads to the trace zero variety, and how to find an easy and compact representation of trace zero elements.

Thesis Defenses academic year 2010/11

On this page, all Doctoral Students of the *Doctoral Program* can announce their Thesis Defense. To do so, please fill in the corresponding form.

Link to the list of the academic year 2006/07, 2007/08, 2008/09, 2009/10

Michael Wiemeler (Fribourg): Thesis Defense
Friday, September 3, 2010, 17:00 Lecture Room 2.52, Physics Building, University of Fribourg, Pérolles Chemin du musée 3, 1700 Fribourg
Title: **On the classification of torus manifolds with and without non-abelian symmetries**

Announce an Activity

All faculty members, postdocs and doctoral students are invited to propose activities which are suitable for the *Doctoral Program* (see Spectrum of Activities). In particular, Doctoral Students can announce their own talks and presentations which are then displayed on the Doctoral Student's Page.

Name *

First name *

University *

E-Mail *

Description:

$e^{i\pi} + 1 =$ please enter the result to prove that you are not a robot.

Submit

* = required fields

In case the form is not adequate, please send an e-mail with a brief description of your project to Bruno.Colbois@unine.ch.

Math Departments in Switzerland

Math Departments worldwide

Directories with lists of Mathematics Departments

- Luchsinger's Worldwide Department Index
- Google Academic Math Departments
- The Penn State Math Directory
- The Florida State Math Directory

Mathematical Societies

Quick links

- Swiss Mathematical Society
- DMV Deutsche Mathematiker-Vereinigung
- EMS European Mathematical Society
- AMS American Mathematical Society
- IMU International Mathematical Union
- SIAM Society for Industrial and Applied Mathematics
- LMS London Mathematical Society
- GAMM Gesellschaft für Angewandte Mathematik und Mechanik
- ÖMG Österreichische Mathematische Gesellschaft
- UMI Unione Matematica Italiana
- SMF Société Mathématique de France
- SMAI Société de Mathématiques Appliquées
- ICIAM International Council for Industrial and Applied Mathematics
- GMFH/SMHES Gesellschaft für Mathematik an den Schweizer Fachhochschulen
- VSMP/SSPMP Verein der Schweizerischen Mathematik- und Physiklehrpersonen

NB: EMS offers a free one year membership to PhD students.

Other directories

- Luchsinger's Worldwide Society Index
- EMS Member Societies
- IMU Member Societies
- ICIAM Member Societies

Search results

Name	David **Albertani**
E-mail	David.Albertani@unige.ch
University	Genève
Advisor	Yvan Velenik

Name	Martin **Anderegg**
E-mail	Martin.Anderegg@unige.ch
University	Genève
Advisor	Nicolas Monod

Name	Rafael Benedikt **Andrist**
E-mail	rafael.andrist@math.unibe.ch
University	Bern
Advisor	Frank Kutzschebauch

Name	Kolawolé Akansa Sourou **Atchade**
E-mail	kolawole.atchade@unine.ch
University	Neuchâtel
Advisor	Michel Benaïm

Name	Yves **Barmaz**
E-mail	yves.barmaz@unige.ch
University	Genève
Advisor	Anton Alekseev

Name	Nicolas **Bartholdi**
E-mail	nicolas.bartholdi@unige.ch
University	Genève
Advisor	Daniel Coray

Name	Reto **Berger**
E-mail	reto.berger@math.unibe.ch
University	Bern
Advisor	Zoltan Balogh

Name	Amandine **Berger**
E-mail	amandine.berger@unine.ch
University	Neuchâtel
Advisor	Bruno Colbois

Name	Stefan **Borell**
E-mail	borell@math.unibe.ch

University	Bern
Advisor	Frank Kutzschebauch

Name	Jonas **Budmiger**
E-mail	jonas.budmiger@stud.unibas.ch
University	Basel
Advisor	Hanspeter Kraft

Name	Caterina **Campagnolo**
E-mail	Caterina.Campagnolo@unige.ch
University	Genève
Advisor	Michelle Bucher-Karlsson

Name	Yves **Courvoisier**
E-mail	yves.courvoisier@unige.ch
University	Genève
Advisor	Martin Gander

Name	Fabien **Crevoisier**
E-mail	fabien.crevoisier@unine.ch
University	Neuchâtel
Advisor	Olivier Besson, Bruno Colbois

Name	Irina **Davydenkova**
E-mail	irina.davydenkova@unige.ch
University	Genève
Advisor	Anton Alekseev

Name	Souleymane **Doucoure**
E-mail	souleymane.doucoure@unine.ch
University	Neuchâtel
Advisor	Olivier Besson

Name	Dennis **Dreesen**
E-mail	dennis.dreesen@unine.ch
University	Neuchâtel
Advisor	Alain Valette

Name	Bruno **Duchesne**
E-mail	bruno.duchesne@unige.ch
University	Genève
Advisor	Nicolas Monod

Name	Hugo **Duminil**
E-mail	hugo.duminil@unige.ch
University	Genève
Advisor	Stanislav Smirnov

Name	Vincent **Emery**

E-mail	vincent.emery@unifr.ch
University	Fribourg
Advisor	Ruth Kellerhals

Name	Nicola **Ermotti**
E-mail	nicola.ermotti@unige.ch
University	Genève
Advisor	Cam Van Quach Hongler

Name	Cyrille **Extermann**
E-mail	Cyrille.Extermann@unige.ch
University	Genève
Advisor	Thierry Vust & Anton Alekseev

Name	Federica **Fanoni**
E-mail	federica.fanoni@unifr.ch
University	Fribourg
Advisor	Hugo Parlier

Name	Katrin **Fässler**
E-mail	katrin.faessler@math.unibe.ch
University	Bern
Advisor	Zoltan Balogh

Name	Chrystel **Feller**
E-mail	chrystel.feller@unifr.ch
University	Fribourg
Advisor	Jean-Pierre Gabriel, Christian Mazza

Name	Peter **Feller**
E-mail	peter.feller@math.unibe.ch
University	Bern
Advisor	Sebastian Baader

Name	Francois **Fillastre**
E-mail	francois.fillastre@unine.ch
University	Neuchâtel
Advisor	Bruno Colbois

Name	Shaula **Fiorelli Vilmart**
E-mail	shaula.fiorelli@unige.ch
University	Genève
Advisor	Anton Alekseev

Name	Thomas **Fournier**
E-mail	thomas.fournier@unifr.ch
University	Fribourg
Advisor	Jean-Pierre Gabriel

Name	David **Frenkel**

E-mail	david.frenkel@unine.ch
University	Neuchâtel
Advisor	Felix Schlenk

Name	Caroline **Giacobino**
E-mail	caroline.giacobino@unige.ch
University	Genève
Advisor	Sylvain Sardy

Name	Christian **Graf**
E-mail	christian.graf@stud.unibas.ch
University	Basel
Advisor	Norbert A'Campo

Name	Jordane **Granier**
E-mail	jordane.granier@ens-lyon.org
University	Fribourg
Advisor	Ruth Kellerhals

Name	Luc **Guyot**
E-mail	luc.guyot@unige.ch
University	Genève
Advisor	Goulnara Arjantseva

Name	Philipp **Habegger**
E-mail	Philipp-Erich-W.Habegger@stud.unibas.ch
University	Basel
Advisor	David Masser

Name	Asma **Hassannezhad**
E-mail	asma.hassannezhad@unine.ch
University	Neuchâtel
Advisor	Bruno Colbois

Name	Muriel **Heistercamp**
E-mail	muriel.heistercamp@unine.ch
University	Neuchâtel
Advisor	Felix Schlenk

Name	Philippe **Henry**
E-mail	Philippe.Henry@unige.ch
University	Genève
Advisor	Nicolas Monod

Name	Pieters **Hester**
E-mail	hesterpieters@gmail.com
University	Genève
Advisor	Michelle Bucher-Karlsson

Name	Philip **Heuser**
E-mail	philip.heuser@unibas.ch
University	Basel
Advisor	Ben Schweizer

Name	Thierry **Hild**
E-mail	thierry.hild@unifr.ch
University	Fribourg
Advisor	Ruth Kellerhals

Name	Clément **Hongler**
E-mail	clement.hongler@unige.ch
University	Genève
Advisor	Stanislav Smirnov

Name	Regis **Houssou**
E-mail	regis.houssou@unine.ch
University	Neuchâtel
Advisor	Olivier Besson

Name	Olivier **Isely**
E-mail	olivier.isely@unine.ch
University	Neuchâtel
Advisor	Alain Valette

Name	Matthieu **Jacquemet**
E-mail	matthieu.jacquemet@unifr.ch
University	Fribourg
Advisor	Ruth Kellerhals

Name	Pierre-Nicolas **Jolissaint**
E-mail	pierre-nicolas.jolissaint@unine.ch
University	Neuchâtel
Advisor	Alain Valette

Name	Maté Lehel **Juhasz**
E-mail	Mate.Juhasz@unige.ch
University	Genève
Advisor	Andras Szenes

Name	Kamran **Kalbasi**
E-mail	kamran.kalbasi@epfl.ch
University	EPF Lausanne
Advisor	Thomas Mountford

Name	Mucyo **Karemera**
E-mail	Mucyo.Karemera@unige.ch
University	Genève
Advisor	Rinat Kashaev

Name	Georges **Klein**
E-mail	georges.klein@unifr.ch
University	Fribourg
Advisor	Jean-Paul Berrut

Name	Aleksandr **Kolpakov**
E-mail	aleksandr.kolpakov@unifr.ch
University	Fribourg
Advisor	Ruth Kellerhals

Name	Aline **Kurtzmann**
E-mail	aline.kurtzmann@unine.ch
University	Neuchâtel
Advisor	Michel Benaïm

Name	Lionel **Lang**
E-mail	lionel.lang@unige.ch
University	Genève
Advisor	Grigory Mikhalkin

Name	Paul-Henry **Leemann**
E-mail	leemann0@etu.unige.ch
University	Genève
Advisor	Tatiana Smirnova-Nagnibeda

Name	Matthias **Leuenberger**
E-mail	matthias.leuenberger@math.unibe.ch
University	Bern
Advisor	Frank Kutzschebauch

Name	Roland **Lötscher**
E-mail	rolandlo@gmail.com
University	Basel
Advisor	Hanspeter Kraft

Name	Justine **Louis**
E-mail	Justine.Louis@unige.ch
University	Genève
Advisor	Anders Karlsson

Name	Bankim **Mandal**
E-mail	Bankim.Mandal@unige.ch
University	Genève
Advisor	Martin Gander

Name	Tatiana **Mantuano**
E-mail	tatiana.mantuano@unine.ch
University	Neuchâtel
Advisor	Bruno Colbois

Name	Bastien **Marmet**
E-mail	bastien.marmet@unine.ch
University	Neuchâtel
Advisor	Michel Benaïm

Name	Maike **Massierer**
E-mail	maike.massierer@unibas.ch
University	Basel
Advisor	Elisa Gorla

Name	Matey **Mateev**
E-mail	matey.mateev@unibas.ch
University	Basel
Advisor	Elisa Gorla

Name	Stéphane **Materna**
E-mail	stephane.materna@math.unibe.ch
University	Bern
Advisor	Christine Riedtmann

Name	Michel **Matter**
E-mail	michel.matter@unige.ch
University	Genève
Advisor	Tatiana Smirnova-Nagnibeda

Name	Thomas **Mettler**
E-mail	thomas.mettler@unifr.ch
University	Fribourg
Advisor	Norbert Hungerbühler

Name	Filip **Misev**
E-mail	filip.misev@stud.unibas.ch
University	Basel
Advisor	Jérémy Blanc

Name	Daniel Arnold **Moldovan**
E-mail	danielarnold.moldovan@epfl.ch
University	EPF Lausanne
Advisor	Prof. Eva Bayer Fluckiger

Name	Samuel **Monnier**
E-mail	samuel.monnier@unige.ch
University	Genève
Advisor	Anton Alekseev

Name	Soyoung **Moon**
E-mail	so.moon@unine.ch
University	Neuchâtel
Advisor	Alain Valette

Name	Filip **Moric**
E-mail	filip.moric@epfl.ch
University	EPF Lausanne
Advisor	János Pach

Name	Dorothee **Müller**
E-mail	dorothee.mueller@unine.ch
University	Neuchâtel
Advisor	Felix Schlenk

Name	Felix **Mustermann**
E-mail	norbert.hungerbuehler@unifr.ch
University	Fribourg
Advisor	Norbert Hungerbühler

Name	Aglaia **Myropolska**
E-mail	aglaya.m@gmail.com
University	Genève
Advisor	Tatiana Smirnova-Nagnibeda

Name	Jan **Nesemann**
E-mail	jan.nesemann@math.unibe.ch
University	Bern
Advisor	Christiane Tretter

Name	Geneviève, **Perren**
E-mail	genevieve.perren@unifr.ch
University	Fribourg
Advisor	Ruth Kellerhals

Name	Bram **Petri**
E-mail	bram.petri@unifr.ch
University	Fribourg
Advisor	Hugo Parlier

Name	EPFL **PhD Students**
E-mail	doc-edma-ext@epfl.ch
University	EPF Lausanne
Advisor	Friedrich Eisenbrand

Name	Thibault **Pillon**
E-mail	thibault.pillon@unine.ch
University	Neuchâtel
Advisor	Alain Valette

Name	Maria **Podkopaeva**
E-mail	Maria.Podkopaeva@unige.ch
University	Genève

Advisor	Anton Alekseev

Name	Mihaela Ileana **Popoviciu Draisma**
E-mail	mihaela.popoviciu@unibas.ch
University	Basel
Advisor	Hanspeter Kraft

Name	Pavel **Putrov**
E-mail	Pavel.Putrov@unige.ch
University	Genève
Advisor	Marcos Marino

Name	Elham **Rajabzadeh Moghaddam**
E-mail	ermoghadam@gmail.com
University	Fribourg
Advisor	Jean-Paul Berrut

Name	Maria Fernanda **Robayo**
E-mail	maferobayo@gmail.com
University	Basel
Advisor	Jeremy Blanc

Name	Rudolf **Rohr**
E-mail	Rudolf.Rohr@unige.ch
University	Genève
Advisor	Anton Alekseev

Name	Gregory **Roth**
E-mail	gregory.roth@unine.ch
University	Neuchâtel
Advisor	Michel Benaïm

Name	Christoph **Röthlisberger**
E-mail	roethlisberger@math.unibe.ch
University	Bern
Advisor	George Metcalfe

Name	Stefan **Sakalos**
E-mail	pista.sakalos@gmail.com
University	Genève
Advisor	Pavol Severa

Name	Heike **Scherer**
E-mail	Heike.Scherer@unige.ch
University	Genève
Advisor	Christian Mazza

Name	Krishnendra **Shekhawat**
E-mail	Krishnendra.Shekhawat@unige.ch
University	Genève

Advisor	Daniel Coray

Name	Imbo **Sim**
E-mail	imbo.sim@unibas.ch
University	Basel
Advisor	Marcus Grote

Name	Zahra **Sinaei**
E-mail	zahra.sinaei@epfl.ch
University	EPF Lausanne
Advisor	Marc Troyanov

Name	Claudio **Somaini**
E-mail	claudio.somaini@math.unibe.ch
University	Bern
Advisor	Christine Riedtmann

Name	Immanuel **Stampfli**
E-mail	immanuel.stampfli@unibas.ch
University	Basel
Advisor	Hanspeter Kraft

Name	Sebastien **Stevan**
E-mail	Sebastien.Stevan@unige.ch
University	Genève
Advisor	Marcos Mariño

Name	Julien **Straubhaar**
E-mail	julien.straubhaar@unine.ch
University	Neuchâtel
Advisor	Olivier Besson

Name	Régis **Straubhaar**
E-mail	regis.straubhaar@unine.ch
University	Neuchâtel
Advisor	Bruno Colbois, Olivier Besson

Name	Géza Zsolt **Szilágyi Szolt**
E-mail	zsolt.szilagyi@unige.ch
University	Genève
Advisor	Andras Szenes

Name	Arlette Love **Temfack Djeulezeck**
E-mail	arlette.temfack@unine.ch
University	Neuchâtel
Advisor	Bruno Colbois

Name	Gerry **Tong Che**
E-mail	gerrytongche@gmail.com

University	Genève
Advisor	Stanislav Smirnov

Name	Gilles **Vilmart**
E-mail	gilles.vilmart@unige.ch
University	Genève
Advisor	Ernst Hairer

Name	Guilherme **Vorpe**
E-mail	guilherme.vorpe@unige.ch
University	Genève
Advisor	Pierre-Alain Cherix

Name	Alain **Weber**
E-mail	alain.weber@ips.unibe.ch
University	Bern
Advisor	Richard Smith

Name	Nicolas **Weisskopf**
E-mail	nicolas.weisskopf@unifr.ch
University	Fribourg
Advisor	Anand Dessai

Name	Martin **Widmer**
E-mail	martin.widmer@stud.unibas.ch
University	Basel
Advisor	David Masser

Name	Michaeel **Wiemeler**
E-mail	michael.wiemeler@unifr.ch
University	Fribourg
Advisor	Anand Dessai

Name	Raphael **Wullschleger**
E-mail	raphael.wullschleger@unine.ch
University	Neuchâtel
Advisor	Felix Schlenk

Name	Christian **Wyss**
E-mail	cwyss@math.unibe.ch
University	Bern
Advisor	Christiane Tretter

Name	Florence **Yerly**
E-mail	florence.yerly@unifr.ch
University	Fribourg
Advisor	Christian Mazza

Name	Thomas **Zürcher**
E-mail	thomas.zuercher@math.unibe.ch

University	Bern
Advisor	Zoltan Balogh

Name	Rimer **Zurita**
E-mail	Rimer.Zurita@unige.ch
University	Genève
Advisor	Petermann Yves

DATA

To see your record, click on DATA and enter your password.

Your data record

To notify an achievement or change your data, please use the validation form or send an e-mail to Bruno.Colbois@unine.ch.

Basic Data

Name	Jonas **Budmiger**
E-mail	jonas.budmiger@stud.unibas.ch
University	Basel
Advisor	Hanspeter Kraft
Entry date	2006-08-10

Program Achievements

Category 1: Participation in graduate courses

Graduate Course: Local Cohomology and Sheaf Cohomology	
Fall term 2007, University of Zürich	
Instructor: Markus Brodmann	
ECTS points: 3	*Reimbursement:* 382.50 CHF

Graduate course: Algebraische Zahlentheorie
Fall term 2007, University of Basel
Instructor: David Masser
ECTS points: 3

Graduate course: Introduction to category theory
Spring term 2008, University of Basel
Course instructor: Giordano Favi
ECTS points: 3

Graduate course: Höhentheorie
Spring term 2008, University of Basel

Course instructor: David Masser
ECTS points: 3

Category 2: Participation in conferences

Summer school: Aspects of moduli theory
June 16 - 19, 2008, Scuola Normale Superiore di Pisa
ECTS points: 3

Workshop: Representation Theory Days in Zurich
Zurich, November 27 - 29, 2008
Course instructor: Karin Baur
ECTS points: 3

Category 3: Presentation of own research results

Jonas Budmiger (Basel)
Lecture at the Graduate Colloquium of the Swiss Doctoral Program, Bern 24.1.2008, 16:00: An Example of an SL2-Hilbert Scheme
ECTS points: 3

Jonas Budmiger (Basel)
Lecture at the Fifth Graduate Colloquium of the Swiss Doctoral Program, Fribourg 29.1.2009, 11:15: From Moduli Spaces to Invariant Hilbert Schemes
ECTS points: 3

Category 5: Complementary scientific training

Second Graduate Colloquium
May 29 - 30, 2007, Basel
Organization: Jonas Budmiger, Philipp Habegger
ECTS points: 3

Category 6: Work as assistant

Teaching, tutoring, administration

Mathematics Institute, University of Basel
ECTS points: 6

Prizes

Third Graduate Colloquium
January 24-25, 2008, Bern
Jonas Budmiger: Birkhäuser Prize for the Best Talk

Summary

Category	**Required**	**Attained**
1	9	12
2	6	6
3	6	6
4		0
5		3
6		6
Total	*30*	*33*
Total reimbursement		
382.5 CHF		

Research Groups

Professor	University	Field
Michel Benaïm	Neuchâtel	Probability
Bruno Colbois	Neuchâtel	Riemannian geometry, metric geometry
Alain Valette	Neuchâtel	Analysis on groups (group algebras, harmonic analyis, geometric group theory)
Anand Dessai	Fribourg	Geometric topology (Lie group actions on manifolds, elliptic genera, curvature and symmetry)
Ruth Kellerhals	Fribourg	Hyperbolic Geometry, Geometry of Discrete Groups
Elisa Gorla	Basel	commutative algebra, algebraic geometry, cryptography, coding theory
Hanspeter Kraft	Basel	algebraic transformation groups, representation theory, geometric and computational invariant theory
David Masser	Basel	Number theory (diophantine geometry, diophantine approximation, and transcendental numbers
Richard S. Smith	Bern	Simulation modeling of plant development
Yvan Velenik	Geneva	Probability theory, statistical physics

Prizes

On the occasion of the **Graduate Colloquium** of the Swiss Doctoral Program **Birkhäuser Publishing House** awards a prize for the best talk and a prize for the best poster.

Date	Prize	Laureate
8.12.2006	Best talk	Philipp Habegger (Basel)
8.12.2006	Best poster	François Fillastre (Neuchâtel)
29.5.2007	Best talk	Thierry Hild (Fribourg)
29.5.2007	Best poster	Shaula Fiorelli (Geneva)
13.9.2007	Swiss Academy of Sciences: Prix Jeunes Chercheurs	Jonas Budmiger (Basel)
13.9.2007	Swiss Academy of Sciences: Prix A.F. Schläfli	Tatiana Mantuano (Neuchâtel)
25.1.2008	Best talk	Jonas Budmiger (Basel)
25.1.2008	Best poster	Clément Hongler (Geneva)
19.9.2008	Best talk	Roland Lötscher (Basel)
19.9.2008	Best poster	Yves Courvoisier (Geneva)
30.1.2009	Best talk	Katrin Fässler (Bern)
30.1.2009	Best poster	Roland Lötscher (Basel)
12.2.2010	Best talk	Georges Klein (Fribourg)
12.2.2010	Best poster	Grégory Roth (Neuchâtel)
18.2.2011	Best talk	Kirstin Shaw (Geneva)
18.2.2011	Best poster	Souleymane Doucouré (Neuchâtel)
9.9.2011	Best talk	Maike Massierer (Basel)
9.9.2011	Best talk	Immanuel Stampfli (Basel)
9.9.2011	Best poster	Lev Kiwi (Fribourg)

Job openings

Current Academic Job Announcements in Switzerland

- EPF Lausanne: Faculty Position in Analysis
- University of Neuchâtel: Full professor position in Applied Mathematics
- University of Basel: PhD and Postdoc positions (Workgroup of Gianluca Crippa)
- ETH Zürich: Professor of Mathematics

Teaching in Switzerland

- Kantonsschule Reussbühl: Stellvertretung 7. 11. - 2. 12. 2011
- Kantonsschule Baden: Kleines Pensum in Mathematik ab August, Stellvertretung im September 2011
- Freies Gymnasium Bern: Pensen in Mathematik, Angewandte Mathematik, Physik ab August 2011
- Kantonsschule am Brühl, St. Gallen: Stellen in Mathematik/Physik und Informatik ab 15. August 2011
- Kantonsschule Bülach: Stellvertretungen in Mathematik ab 24. Oktober 2011
- Öffentliche Ausschreibungen in der Schweiz

Positions in Europe

- Université de Strasbourg: 24 months Post-doctoral position in Mathematics
- Portugal and US: ICTI CMU-Portugal Ph.D. and Postdoctoral Fellowship in Applied Mathematics, Carnegie Mellon University

Positions in the US

- Portugal and US: ICTI CMU-Portugal Ph.D. and Postdoctoral Fellowship in Applied Mathematics, Carnegie Mellon University
- CMU Tenure track position in Applied Analysis, Carnegie Mellon University

Permanent Math Job Pages in Switzerland

- University of Basel
- University of Fribourg
- University of Genève
- ETH Zürich
- Seminar Angewandte Mathematik, ETHZ
- Institute for Operations Research, ETHZ

- University of Zürich

General Math Job Pages

- myScience.ch
- Luchsinger's Job Pages: Switzerland, worldwide
- EuroScienceJobs
- Careerjet
- Career.edu
- Euro-Math-Job
- Stellenbörse Mathematik
- SIAM Job Page
- The Statistics and Mathematics career source
- Data Shaping Solutions - Job search
- Data Shaping Solutions - Resumes
- jobrapido
- Renego
- JOBkralle

Mathematicians and Statisticians

… and their way to professional independence:

- an essay of Dr. C.J. Luchsinger.

Grants

- Swiss National Science Foundation
- European Grants
  - Erasmus Mundus scholarships
  - General FP7
  - CORDIS FP7
  - CORDIS FP7 Ideas
  - ERC Starting Independent Research Grant (pdf)
  - Find a call (there, click on *Ideas: 2006-12-22: ERC-2007-StG*

Traineeships

- IASTE is an organization for the **exchange of students** at higher education institutions wishing to obtain **practical experience abroad**. **Companies**, on the other hand, who are interested to **offer traineeships** benefit from the worldwide IASTE network. The service is free of charge for the employers.

Documents

This is a repository for documents of general interest. To post such a document, please send it to Bruno.Colbois@unine.ch.

- How to write your first article (Steven G. Krantz)
- How to Give a Good Colloquium (John E. McCarthy)
- Instructions for typesetting a poster
- What is a doctorate? The position of the CRUS: deutsch, français

History of the *Troisième cycle Romand de mathématiques*

General

Please see the article of Claude Weber on the history of the *Troisième cycle*. The text has been written on the occasion of the centennial of the Swiss Mathematical Society in 2010. It is published in this archive with the friendly permission of the EMS Publishing House.

Presidents of the Troisième cycle

- 1969-1972 Georges de Rham, Uni Lausanne
- 1973-1994 Michel Kervaire, Uni Geneva
- 1995-2002 Alain Valette, Uni Neuchâtel
- 2003-2007 Olivier Besson, Uni Neuchâtel
- 2008-2009 Norbert Hungerbühler, Uni Fribourg

The *Troisième cycle Romand de mathématiques* has been merged with the *Swiss Doctoral Program in Mathematics* by the end of 2009.

Annual reports of the Troisième cycle

- 1969-70
- 1970-71
- 1971-72
- 1972-73
- 1973-74
- 1974-75
- 1975-76
- 1976-77
- 1977-78
- General remarks 1978
- 1978-79
- 1979-80
- 1980-81
- 1981-82
- 1982-83
- 1983-84
- 1984-85
- 1985-86
- 1987
- 1988
- 1989
- 1990