

First network meeting for Sida- and ISP-funded PhD students in mathematics

Stockholm 7-8 March 2017

Organizers: Linköping University and the International Science Programme, Uppsala University

Sponsors: The bilateral programmes in Rwanda, Uganda and Tanzania and the International Science Programme

Objectives of the meeting: The purpose of the meeting is to bring together PhD students and post-docs in mathematics supported by Sida and ISP to build networks, to share experiences and visions and to learn about each other's research.

Venue meeting: Sida headquarters, Vallhallavägen 199, Stockholm

Hotel: Best Western, Hotel Karlaplan, Skeppargatan 82, Stockholm

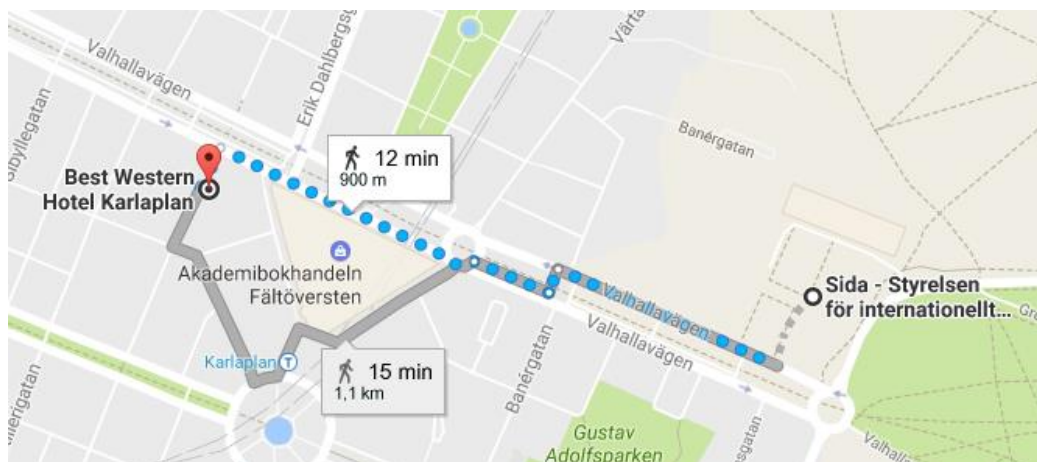
Participants:

- PhD students in mathematics in the Sida-funded bilateral programmes in Rwanda, Tanzania, Uganda and Mozambique
- PhD students in mathematics in the ISP core programme
- Postdoctoral fellows from African partner universities
- Coordinators from the bilateral programmes and ISP core programme
- Representatives from ISP
- Representatives from Linköping University
- Representatives from Sida

Invited speakers:

- Prof. Christer Kiselman, Uppsala University
- Prof. Michel Waldschmidt, Université P. et M. Curie (Paris VI)
- Mr. Anders Wändahl, Karolinska Institutet

Map



Programme day 1

First network meeting for Sida- and ISP-funded PhD students in mathematics

Tuesday 7 March, Sida Headquarters, room Hörsalen		
Time	Activity	Moderator(s)
12:00–13:00	Lunch in Oasen, Sida Headquarters	
13:00–13:15	Welcome note by Sida representative	Leif Abrahamsson (ISP) and Bengt-Ove Turesson (Linköping University)
13:15–13:30	Presentation of participants	
13:30–13:45	Welcome note by Leif Abrahamsson (ISP) and Bengt-Ove Turesson (Linköping University)	
13:45–14:30	Some of the most famous open problems in number theory Lecture by Prof. Michel Waldschmidt	
14:30–15:00	Refreshment break in Hörsalen	
15:00–15:45	Discretization and tropicalization: How are they related? Lecture by Prof. Christer Kiselman	Jared Ongaro (University of Nairobi)
15:45–16:15	Presentation by Alex Tumwesigye (Makerere University/MdH) on studies in the sandwich mode	
16:15–16:30	Iara Cristina Alvarinho Goncalves – Eduardo Mondlane University/SU	
16:30–16:45	Dennis Wokiyi - Makerere University/ LiU	
16:45–17:00	Emanuel Evarest Sinkwembe - University of Dar es Salaam/ LiU	
17:00–17:15	Adama Kone - University of Bamako	
17:15	Closure of day 1	
18:00 –	Dinner at restaurant Karavanen, Sida headquarters <i>After dinner speech by Prof. John Mango, Makerere University</i>	

Programme day 2

First network meeting for Sida- and ISP-funded PhD students in mathematics

Wednesday 8 March, Sida Headquarters, room Asante		
Time	Activity	Moderator
09:00–09:45	Selecting a journal where to publish... do it right and avoid the pitfalls! Lecture by Anders Wändahl	John Mango Magero (Makerere University)
09:45–10:00	Betty Kivumbi Nannyonga - Makerere University	
10:00–10:30	Refreshment break in Oasen (outside Asante)	
10:30–10:45	John Musonda - University of Zambia/MdH	Sylvester Rugeihyamu (University of Dar es Salaam)
10:45–11:00	Tin Nwe Aye - Mandalay University/MdH	
11:00–11:15	Yaya Youssuf - UGB University of Saint-Louis / UU	
11:15–11:30	Adson Banda - University of Zambia/LiU	
11:30–11:45	Andongwisye (Ando) John Mwakasisile - Univerisity of Dar es Salaam/ LiU	
11:45–12:45	Discussion on common issues	John Mango Magero (Makerere University)
12:45–13:45	Lunch in Oasen, Sida headquarters	
13:45–14:45	Evaluation of the EAUMP network Presentation by Dr. Martin Singull	Rebecca Anderson (ISP)
14:45–15:00	Celestin Kurujiywami - University of Rwanda/ LiU	Eunice Mureithi (University of Dar es Salaam)
15:00–15:15	Stanislas Muhinyuza - University of Rwanda/SU	
15:15–15:30	Béatrice Byukusenge - University of Rwanda / LiU	
15:30–16:00	Refreshment break in Oasen (outside Asante)	
16:00–16:15	Innocent Ngaruye - University of Rwanda / LiU	David Ssevviiri (Mak- erere University)
16:15–16:30	Venuste Nyagahakwa - University of Rwanda / LiU	
16:30–16:45	Abubakar Mwasa/Asaph Keikara Muhumuza/Benard Abola/Innocent Ndikubwayo /Yasin Kikabi	
16:45–17:00	Edward Ngailo/Pitos Biganda/Uledi Ngulo	
17:00	Closure of the meeting	

Abstracts invited speakers

Title: Some of the most famous open problems in number theory

Speaker: *Prof. Michel Waldschmidt, Université P. et M. Curie (Paris VI)*

Abstract: Problems in number theory are sometimes easy to state and often very hard to solve. We survey some of them. We start with prime numbers. The twin prime conjecture and the Goldbach conjecture are among the main challenges. The largest known prime numbers are Mersenne numbers. Are there infinitely many Mersenne (resp. Fermat) prime numbers? Mersenne prime numbers are also related with perfect numbers, a problem considered by Euclid and still unsolved. One of the most famous open problems in mathematics is Riemann's hypothesis, which is now more than 150 years old.

Diophantine equations conceal plenty of mysteries. Fermat's Last Theorem has been proved by A. Wiles, but many more questions are waiting for an answer. We discuss a conjecture due to S.S. Pillai, as well as the *abc*-Conjecture of Oesterlé-Masser.

Kontsevich and Zagier introduced the notion of *periods* and suggested a far reaching statement which would solve a large number of open problems of irrationality and transcendence.

Finally we discuss open problems (initiated by E. Borel in 1905 and then in 1950) on the decimal (or binary) expansion of algebraic numbers. Almost nothing is known on this topic.

Title: Discretization and tropicalization: How are they related?

Speaker: *Prof. Christer Kiselman, Uppsala University*

Abstract: Discretization and tropicalization are two important procedures in contemporary mathematics. I will present them and motivate why they are important. Discrete objects, like carpets and mosaics, have been around for thousands of years, but the advent of computers and digital cameras has made them ubiquitous. Tropical mathematics is by comparison a relatively new branch of mathematics. I shall compare the two and also pose a philosophical/mathematical problem in relation to them.

Title: Selecting a journal where to publish... do it right and avoid the pitfalls!

Speaker: *Mr. Anders Wändahl, Karolinska Institutet*

Abstract: The choice of journal does influence the career of a researcher. This fact is the rationale of this presentation. The individual researcher will be ranked, measured and evaluated according to her/his publication list when it comes to tenure and promotion. On an aggregated level, institutions, research groups and research networks will also be evaluated in relation to the quality of the published articles. We will go through different ways to distinguish good journals from the abundant number of less good alternatives.

List of Participants

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*will be present only on 7/3

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