



FOR EXCELLENT RESEARCH IN VIETNAM



SOME PHOTOS

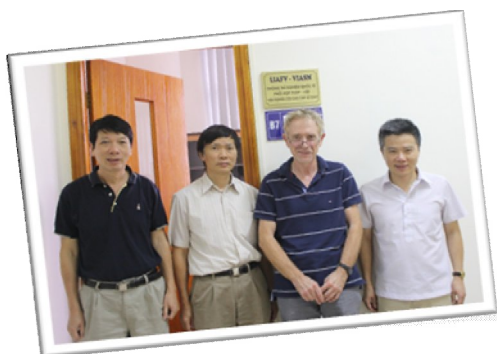
**Vietnam Institute for Advanced Study in Mathematics (VIASM)**

**Founded in 2011**

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**Board of Directors**

Scientific Director: Prof. Ngo Bao Chau  
Managing Director: Prof. Nguyen Huu Du  
Deputy Director: Dr. Nguyen Thi Le Huong



From the right: Professors NB Chau, L. Schwartz, LT Hoa and NH Du in front of LIAFV-VIASM laboratory.

Banner's photo: Vice Minister of Education and Training Tran Quang Quy (middle in the first row) with teachers in a training course for high school math teachers.

FOR RESEARCH FELLOW APPLICANTS

For more information, please visit:  
<http://viasm.edu.vn/news-and-events/information-for-applicants>

**Activities of the National Program for the Development of Mathematics (NPDM)**

In 2013, several training schools for high school math teachers and high school gifted students specializing in math have been held. Notably, three training schools for math teachers have been held over the three parts of Vietnam (the northern, central and southern ones) with the participation of 81 teachers from high schools for gifted students over the country.

Two training schools for high school gifted students were also held in Hanoi and Ho Chi Minh City with the participation of 86 and 89 high school students respectively.

For the first semester of the school year 2013-2014, the Program gave scholarships to 265 high school students from 70 high schools and 165 math students from 12 universities all over Vietnam.

Moreover, the Program continued calling for applications for Mathematical Research Awards 2013. There were 165 papers applied for the Award and 78 published papers have been awarded.

VIASM has been actively involved in all the activities of the Program.

NPDM's website:  
<http://viasm.edu.vn/npdm/>



Prof. Phung Ho Hai teaching at Summer Mathematical School for high school students (Hanoi, Jul & Aug 2013)



Prof. Ngo Bao Chau handing the certificate to a participant at the first training school for high school teachers (Hanoi, Aug 2013)



Assoc. Prof. Vu The Khoi giving a lecture at the third training school for high school teachers (Can Tho, Nov 2013)

## Training schools for high school math teachers and gifted students in 2013

The first training school for math teachers from high schools for gifted students in 2013 took place at VIASM, 26-31 August, the second one was held on 10-15 October in Da Nang and the third one was held on 21-26 November in Can Tho.

The schools aimed to provide high school teachers more materials and techniques using for enhancing knowledge of gifted students. The main content of this training is contained in the lectures about arithmetics and combinatorics as well as in the discussions about teaching methods for gifted students. Each school attracted around 25-30 participants who are math teachers from high schools for gifted students.

Training schools for high school gifted students specializing in math were also held, the first one in Hanoi and the second one in Ho Chi Minh City. These schools aimed to strengthen high school gifted students knowledge for math contests in Vietnam.



Teachers at the second training school for high school math teachers (Da Nang, October 2013)

### FAST FACTS

# 41 and 22

40 research fellows and visiting researchers came to work at VIASM from August to December 2013. Among them, there were 22 foreigners or Vietnamese from abroad.

## The 8th Vietnamese Mathematical Congress

The 8th Vietnamese Mathematical Congress was held from the 10th to 14th of August, 2013 at the University of Information & Communication, Nha Trang City, Khanh Hoa Province.

This is the largest national mathematical congress in Vietnam organized every 5 years. Since 1974, the congress has been an opportunity for Vietnamese mathematicians to

talk about their work in research, teaching and applying mathematics. This is also the forum to discuss the contemporary issues of the mathematical development of Vietnam. The congress was also supported by the NPDM.



The 8th Vietnamese Mathematical Congress in Nha Trang (August 2013)

There were over 700 participants, divided into eight parallel sessions: Algebra – Geometry – Topology, Analysis, Ordinary and Partial Differential Equations, Discrete Mathematics and Mathematical Informatics, Optimization and Scientific Computation, Probability Theory and Mathematical Statistics, Applied Mathematics, Education and Mathematical History. The congress consisted of 5 plenary lectures, 43 session lectures and over 300 short talks at parallel sessions.

For more details, please visit:  
<http://viasm.edu.vn/activities/vmc2013/>

## Autumn school: "Stochastic Processes and Applications"

The purpose of this autumn school was to (i) provide a basis course on modern probability theory and stochastic processes for young lecturers, researchers and students; and (ii) introduce some new research directions. The school had two parts. In part I, there were two series of lectures at the school focusing on two sub-areas: (a) stochastic analysis (Markov processes, martingales, diffusion processes etc.) and (b) sums of dependent random variables (stochastic inequalities, central limit theorem, Stein's method...). In part II, the lectures presented some research areas including queuing theory, the stability theory of stochastic differential equations etc.

There were five lecturers at the school and it attracted more than twenty young researchers and students.

For more information, please visit:  
<http://viasm.edu.vn/activities/spa/>

### WHAT RESEARCHERS SAY?

"My interests of research include: Partial Differential Equation Geometry, Geometry and Variational Analysis. Besides doing research on Monge-Ampère equations during two months at VIASM, I also gave lectures for mini-course "From a classical theorem of Jorgens, Calabi, and Pogorelov to the affine Bernstein problem". It was amazing that just in the first two weeks at VIASM, I met and had wonderful talks with lots of excellent and talented Vietnamese mathematicians from all over the world." – Prof. Le Quang Nam.



Prof. Le Quang Nam  
(Columbia University, USA  
and now is at Institute of Mathematics – VAST)

### WHAT RESEARCHERS SAY?

"The working environment at VIASM is really excellent for research groups like us. Since our group members devoted all our time to work at VIASM (during 2 months), we discussed very often as well as developing scientific collaboration and exchange with foreign mathematicians. During the period working at VIASM, we did not have to give lectures at universities, we only focused on doing research. We had certain results and finished some papers at VIASM..." - Assoc. Prof. Phan Thi Ha Duong.



Dr. Dao Thi Thu Ha (Univ. of Versailles St Quentin en Yvelines, France) giving a lecture at the Autumn School



Prof. Markus Brodmann  
(Univ. Zürich, Switzerland)

## Research groups

From August 2013 until December 2013, there have been 2 research groups working at the VIASM:

- Partial Differential Equations group includes 4 members: Dr. Cung The Anh (Head), Dr. Tran Dinh Ke, MSc. Dao Trong Quyet, and MSc. Pham Thi Trang.
- Commutative Algebra group includes 17 members: Prof. Nguyen Tu Cuong and Prof. Ngo Viet Trung (Co-heads), Assoc. Prof. Tran Tuan Nam, Assoc. Prof. Le Thi Thanh Nhan, Dr. Tran Nguyen An, Dr. Nguyen Thi Dung, Dr. Le Xuan Dung, Dr. Nguyen Van Hoang, Dr. Ha Minh Lam, Dr. Nguyen Thi Hong Loan, Dr. Cao Huy Linh, Dr. Le Dinh Nam, Dr. Pham Hung Quy, Dr. Tran Nam Trung, Dr. Dinh Thanh Trung, Dr. Hoang Le Truong, MSc. Do Trong Hoang, and 6 visiting professors: Prof. M. Brodmann, Prof. M. Chardin, Prof. M. Morales, Prof. Ha Huy Tai, Dr. Pham Le Hung and Prof. N. Terai.

## Visitors

There have been 24 visitors come to VIASM from August 2013 until the end of the year. Among them there were 6 Vietnamese mathematicians currently working abroad.

## Two year performance review of VIASM

The conference for 2 year performance review of Vietnam Institute for Advanced Study in Mathematics (VIASM) took place at VIASM on the whole day August 24, 2013.

The conference welcomed the presence of Minister of Science and Technology Nguyen Quan, Vice-Minister of Education and Training Tran Quang Quy, many researchers who were working or had worked at VIASM, some leading Vietnamese mathematicians, and representatives from related Ministries as well.

After two years of official operations, VIASM had successfully created a special academic environment where scientists and

university lecturers can work together to develop new ideas.

Over its past two years, VIASM had attracted 137 researchers, including 40 foreign and overseas Vietnamese mathematicians. 21 papers had been published in international math journals and 69 preprints (all these works had been fully or partially done during the time the researchers worked at VIASM). The Institute also held 17 short-term training courses.

Moreover, the Institute organized eight international conferences and workshops, notably the SMF-VMS Joint Congress (August 2012) and the 8th Vietnamese Mathematical Congress (August 2013).

Furthermore, VIASM also actively assists the National Program for the Development of Mathematics from 2010 to 2020 to implement the Program activities such as awarding Vietnamese math publications, granting scholarships to excellent high school and college students in mathematics, organizing training schools for high school math teachers and students etc.



Prof. Truong Nguyen Tran  
(École Polytechnique de Palaiseau, France)



Assoc. Prof. Le Thi Thanh Nhan  
(Thai Nguyen University)

## WHAT RESEARCHERS SAY?

"Our research group has 4 members. We study the existence and long-time behavior of solutions to some classes of nonlinear evolution equations in infinite-dimensional spaces. During the stay at VIASM, we organized weekly seminars, a mini-course on Navier-Stokes equations, and a mini-workshop on differential equations and applications. I think the working environment at VIASM is very good, the staffs are professional and hospitable" - Assoc. Prof. Cung The Anh.



Prof. Marcel Morales  
(Univ. Grenoble I, France)

## Mini-workshop: "Differential Equations and Applications"

Mini-workshop "Differential Equations and Applications" took place on October 18, 2013, at VIASM. It was organized by VIASM and the research group Differential Equations which were working at the Institute.

The aim of this mini-workshop was to bring together members of the mathematical community whose interest lies in applied mathematics to assess some recent developments, ideas and methods. The mini-workshop consisted of eight 45-minute invited lectures given by experts in the field.

The invited lectures focused on some recent aspects and developments in the field of differential equations, including partial differential equations, functional differential equations and algebraic-differential equations, such as inverse problems, stability and stabilization problems, controllability problems, estimation problems, differential variational inequalities and their applications in heat and diffusion processes, fluid mechanics and population dynamics.

The mini-workshop attracted more than 60 participants, including professors, scientists, lecturers, PhD students and master students coming from many institutes and universities such as Institute of Mathematics - VAST, University of Science - VNU Hanoi, Hanoi National University of Education, Hanoi University of Science and Technology, Hanoi Water Resources University, Hanoi Electric Power University, Hanoi University of Commerce etc.



Prof. Dinh Nho Hao (Institute of Mathematics - VAST) giving the first talk at the mini-workshop

## International Conference on Commutative Algebra and Its Interaction to Algebraic Geometry and Combinatorics (CA2013)

The International Conference on Commutative Algebra and Its Interaction to Algebraic Geometry and Combinatorics took place at VIASM and Institute of Mathematics – VAST from 16 to 20 December 2013.

The Conference was a big event in the special semester on Commutative Algebra 2013 at VIASM and Institute of Mathematics – VAST. It aimed to present recent developments in Commutative Algebra and its interaction in Algebraic Geometry and Combinatorics. There was also discussion on how to promote mathematics in Vietnam.

The Conference was also an event to celebrate Prof. Ngo Viet Trung's 60th birthday, who is a former Director of Institute of Mathematics – VAST and the Vice Chairman of the Scientific Council of VIASM.

There were 9 plenary talks and 55 session talks.

There were more than 100 participants from different institutes and universities in Vietnam and countries over the world. Among them there were 63 foreign mathematicians and Vietnamese mathematicians working overseas.

During the Conference, the Exhibition "IMAGINARY – Through the Eyes of Mathematics" was also held at VIASM, which attracted many audiences.

## Workshops/ Conferences

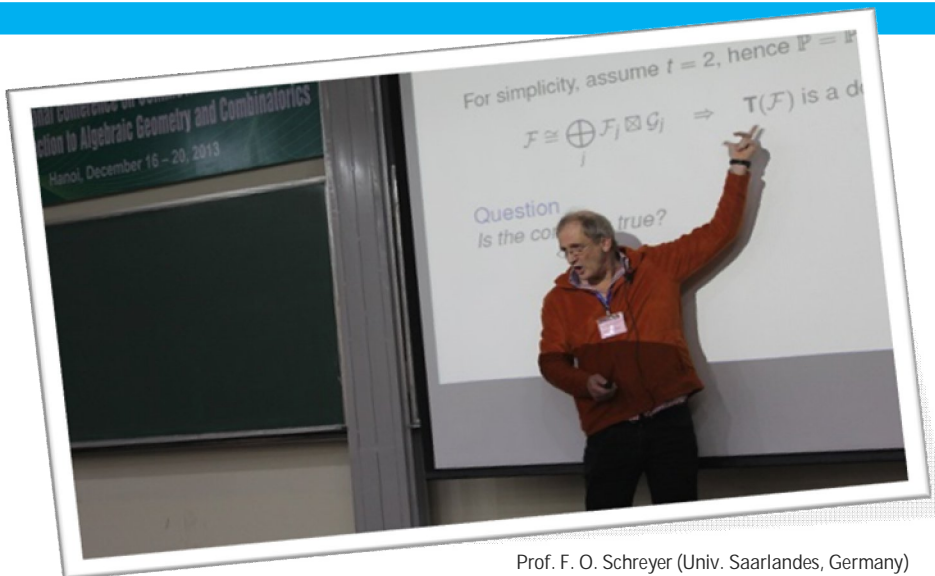
Four workshops, conferences have been organized by the VIASM since August 2013:

- The 8th Vietnamese Mathematical Congress, August 10 – 14, 2013, in Nha Trang.
- Conference for Two Year Performance Review of VIASM, August 24, 2013.
- Mini-workshop "Differential Equations and Applications", October 18, 2013.
- International Conference on Commutative Algebra and Its Interaction to Algebraic Geometry and Combinatorics, December 16 - 20, 2013.

## Special Programs

3 public lectures and 1 special school have been organized:

- Public lecture "Why is it good to study at the Ecole Polytechnique de Palaiseau?" by Prof. Truong Nguyen



Prof. F. O. Schreyer (Univ. Saarlandes, Germany) giving the first plenary talk at CA2013

Tran (École Polytechnique de Palaiseau, France), August 3, 2013.

- Public lecture "Massive Open Online Courses (MOOCs)" (joint public lecture with John von Neumann Institute – VNU HCMC) by Prof. Duong Nguyen Vu (JVN), Dr. Giap Van Duong (Giapschool) and MSc. Nguyen Ngoc Tuan (VIASM), August 31, 2013.
- Autumn school "Stochastic processes and applications", two periods, 1-26 October 1-26, 2013 and November 4-30, 2013.
- Public lecture "IMAGINARY-Through the Eyes of Mathematics: Between Research, Application and Communication" by Prof. Gert-Martin Greuel (Univ. of Kaiserslautern, Germany), September 17, 2013.

## Social activities

From time to time, VIASM also organizes excursions in order to strengthen participants' knowledge about the landscape and history of Vietnam, as well as solidifying the relationship of the researchers and visitors.



A visit to Thang Long Imperial Citadel during CA 2013 Conference (December 2013)

## New appointed Managing Director of VIASM

Since October 18, 2013, Prof. Nguyen Huu Du – Vice-Rector of Hanoi University of Sciences, VNU Hanoi (and also Secretary of Scientific Council of VIASM) has been appointed as the Managing Director of VIASM in replacement of Prof. Le Tuan Hoa who was earlier appointed as the Director of Institute of Mathematics - VAST.



Prof. Nguyen Huu Du  
Managing Director of VIASM

The Managing Director is an executive position and is responsible for the day to day operation of the Institute. From June 1st, 2011 to Oct 18th, 2013, Prof. Le Tuan Hoa was the Managing Director of the VIASM. Prof. Le Tuan Hoa played a significant role in drafting the plan for Vietnam National Program for the Development of Mathematics from 2010 to 2020. Being the first Managing Director of VIASM, together with the Board of Directors, Prof. Le Tuan Hoa had led the Institute from its early days of establishment to its current mature status.

Prof. Nguyen Huu Du is a prestigious mathematician and has lots of management experience. Since he is now also the President of Vietnam Mathematical Society, he will continue to contribute to the VIASM as well as to the development of Vietnam mathematics.

## FURTHER INFORMATION

For more information, please visit:  
<http://viasm.edu.vn/activities/>