VIASM Newsletter

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FOR EXCELLENT RESEARCH IN VIETNAM

Vietnam Institute for Advanced Study in Mathematics (VIASM)

Founded in 2011

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The Ceremony of Granting Mathematical Research Awards and Student Scholarships 2014

The 2nd Ceremony for Granting Mathematical Research Awards of 2013 and Student Scholarships for the academic year 2013 – 2014 has been held at Ta Quang Buu Library in Hanoi University of Science and Technology's campus on May 10th, 2014.

Assoc. Prof. Tran Quang Quy, Vice Minister of Education and Training (MOET) – Chief Executive of the "National Program for the Development of Mathematics until 2020" (NPDM) and Prof. Tran Van Nhung, General Secretary of the State Council for Professor Titles – Deputy Chief

Executive of NPDM attended the Ceremony, among other Executive Board members, the representatives of other departments of MOET, mathematicians as well as the representatives and students from universities and high schools all over Vietnam.

There were 78 publications awarded (each worth 28.750.000 VNĐ, equivalent to 1357 USD) in total of 176 applications. These ones were published in ISI journals in 2012-2013.

The Program has granted scholarships for the academic year 2013-2014 to 167 students from 12 universities out of 229 nominated students and 265 high school students out of 392 nominated students from 72 gifted high schools on a nationwide.

During the past two year and the next years, along with the granting mathematical research awards and student scholarships, the Program has kept implementing other activities such as: organizing training schools for high school math teachers, training schools for gifted students; organizing mathematical development conferences; funding for research on applications of mathematics in socio-economic development etc.

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

VIASM's staff and volunteers at the Ceremony

SOME PHOTOS

Prof. Nguyen Huu Du (VIASM) and Prof. Le Tuan Hoa (Institute of Mathematics) handing certificates to scholarship granted students at the Ceremony.

Many young researchers have achieved Mathematical Research Award this year.

Representative of granted students express his feeling after receiving the NPDM scholarship.

NPDM WEBSITE

For more information, please visit the Program website at:
http://viasm.edu.vn/npdm/

Banner's photo: Vice Minister of MOET Tran Quang Quy and Prof. Tran Van Nhung with representatives of Mathematical Research Award authors and scholarship granted students.

Workshops/ Conferences

Four workshops have been organized by the VIASM during the first 6 months of 2014:

- ➲ Workshop on birational geometry and stability of moduli stacks and spaces of curves, January 5 to March 1, 2014.
- ➲ The 12th Workshop on Optimization and Scientific Computing, April 23-25, 2014 in Ba Vi, Hanoi.
- ➲ International Workshop and Summer School on Variational Analysis and Approximation Theory, May 12-17, 2013.
- ➲ Mini-workshop on Groups, Rings and related topics, May 29-30, 2014.

Prof. Joe Harris (Harvard University, USA, on the right) at The Moduli 2014 Workshop.

Workshop on birational geometry and stability of moduli stacks and spaces of curves (Moduli 2014)

The "Workshop on Birational Geometry and Stability of Moduli Spaces and Stacks of Stable Curves" began on January 5. Each week had involved three hours of lectures and, hands-on problem sessions on Tuesday and Thursday centered on a topic about moduli spaces or curves. In addition most Fridays, the visiting lecturers travelled to the Institute of Mathematics to hear local mathematicians present solutions to problems and to answer questions these suggest.

The Workshop's first week introduced basic notions and problems about birational geometry of parameter and moduli spaces. The second week was devoted to working out the details of some of these questions for some guiding examples. The third week dealt with stability conditions that lead to moduli spaces in algebraic settings, focusing on moduli of representations of quivers as an introduction to Bridgeland stability and related areas of active research.

After a break for the Tet holiday, the Workshop's second half began with a week on foundations of geometric invariant theory and its applications to the construction of moduli spaces. The last two weeks focused on the relations between the geometry of linear series on curves and the commutative and homological algebra of free resolutions of their ideals, before the Workshop returned to the topics of the first weeks to consider recent constructions of effective divisors.

The Workshop lasted until March 1, 2014. Already, one preprint completed during the Workshop has appeared on http://arxiv.org/abs/1401.1613 and other work done during the Workshop will be posted in the coming months.

WHAT RESEARCHERS SAY?

"Through the hard work of both the visiting lecturers and the local audience, the Workshop (Moduli 2014) has succeeded in opening up an important area of contemporary algebraic geometry to a new Vietnamese audience. Both groups are grateful to the staff of VIASM and of the Institute of Mathematics for facilitating their tasks by providing an excellent working environment." - *Prof. Ian Morrison (Fordham University, USA).*

Prof. Ian Morrison
(Fordham University, USA)

The 12th Workshop on Optimization and Scientific Computing (OSC 2014)

The 12th workshop on Optimization and Scientific Computing took place from 23 to 25 April 2014 in Ba Vi, Hanoi.

The series of these workshops are organized annually, starting from 2003. The series was founded by Prof. Hoang Xuan Phu (Institute of Mathematics – VAST) and it has become an annual national forum for the exchange of ideas, techniques, and state-of-the-art applications in the fields of optimization and scientific computing among Vietnamese mathematicians, PhD and graduate students.

Prof. Hoang Tuy (on the right) having his talk at the 12th OSC Workshop.

Moreover, it is to support outstanding math graduate and PhD students of universities in Vietnam to improve their ability, to learn some advanced lectures and talks as well as to be acquainted with the mathematicians.

This year, the 12th workshop of the series is jointly organized by Vietnam Institute for Advanced Studies in Mathematics and Institute of Mathematics. The workshop attracts more than 120 participants from all over Vietnam.

For more details about the Workshop, please visit: http://viasm.edu.vn/activities/osc2014/?lang=en

International Workshop and Summer School on Variational Analysis and Approximation Theory (IWSSVA 2014)

International Workshop and Summer School on Variational Analysis and Approximation Theory, under the chairmanship of Prof. Dinh Dung (Hanoi National University) and Prof. Nguyen Dong Yen (Institute of Mathematics – VAST) took place at B4 Lecture Hall, VIASM from May 12 to May 17, 2014. It attracted 50 participants from many institutions in Vietnam. This is one of the scientific activities of Prof. Dinh Dung's research group at VIASM.

The participants were introduced about new study results and a series of three featured lectures about "Basic Tools of Variational Analysis and Generalized Differentiation", "Tilt Stability in Optimization with Applications to Nonlinear Programming" and "Full Stability in Optimization with Applications to Conic Programming" by Prof. Boris Mordukhovich (Wayne State University, USA). In addition, there were ten other invited lectures by some other well-known mathematicians from Spain, Taiwan, Hong Kong, Korea and Vietnam.

Prof. Boris Mordukhovich (Wayne State University, USA)

According to Prof. Dinh Dung, the direction of Variational Analysis and Approximation Theory is one of the most attractive contemporary research fields which involves many mathematicians. The Workshop also drew attention of researchers to the subject and create a forum for participants to discuss related issues. This would promote research in Variational Analysis and Approximation Theory and the diversified applications of the Theory.

Mini-workshop " Groups, Rings and related topics"

Mini-Worship on "Groups, Rings and Related Problems" took place at the VIASM, from May 29 to May 30, 2014. The Workshop was organized by the VIASM and the research group of associate algebras working at the institute.

The purpose of this workshop is to create a platform for mathematicians to exchange new ideals and results on Algebras and Its Applications, as well as to draw attention of young researchers and students to the subject.

The Workshop attracted bout 40 participants coming from various institutions and cities (Hanoi, Vinh, Can Tho, Ho Chi Minh City etc). There are four 45-minute talks and 11 other 30-minute talks during the two-day workshop, which related to the group of units of rings (specially, division rings), general linear groups, the structure of non-commutative and commuative Noetherian rings, as well as the influence of idempotents on the structure of rings.

We all hope that there will be more events on the field among various activities of Vietnamese mathematical community.

Mini-courses

Four mini-courses - by 3 foreign proffesors and 1 Vietnamese proffesssor working abroad - also have been organized:

➲ Mini-cours "Matrix recovery problems and mathematical tools" by Prof. Vu Ha Van (Yale University, USA), January 25-27, 2014.

➲ Mini-course "Three Lectures on Quasi Monte Carlo Methods and Applications to PDE with Random Coefficients" by Prof. Ian H. Sloan (University of New South Wales, Australia), March 12, 2014.

➲ Mini-course "Group cohomology and T-functor" by Prof. Jean Lannes (Université Paris Diderot, France), April 21 – May 15, 2014.

➲ Mini-course "Some topics on Graph Theory" by Prof. Moshe Rosenfeld (University of Washington, USA), June 18-27, 2014.

➲ Mini-course "Approximations for stochastic and parametric partial differential equations" by Dr. Hoang Viet Ha (Nanyang Technological University, Singapore), June 19-20, 2014.

Dr. Le Cong Trinh
(Quy Nhon University, Binh Dinh)

Research groups

From January to June 2014, there have been 8 research groups working at the VIASM:

➲ Group *"Soft computing and bioinformatics"* consisted of 4 members: Assoc. Prof. Hoang Xuan Huan (Head), Dr. Do Duc Dong, Dr. Dang Cao Cuong, M.Sc. Hoang Thi Diep.

➲ Group *"Algebraic Geometry"* consisted of 21 members: Prof. Ian Morrison (Head), Prof. Izzet Coskun, Prof. Joe Harris, Assoc. Prof. Jarod Alper, Asst. Prof. Anand Deopurkar, Asst. Prof. Maksym Fedorchuk, Assoc. Prof. Samuel Grushevsky, Asst. Prof. Jack Huizenga, Asst. Prof. David Smyth, Dr. Hanbom Moon, Prof. Lee Yongnam, Asst. Prof. Arend Bayer, Asst. Prof. Emanuele Macri, Dr. Matthew Woolf, Prof. David Donghoon Hyeon, Prof. Gavril Farkas, Dr. Angela Ortega, Dr. Nicola Tarasca, Asst. Prof. Filippo Viviani, Assoc. Prof. Ana-Maria Castravet, Assoc. Prof. Evgueni Tevelev.

➲ Group *"Topology and geometry"* consists of two members: Assoc. Prof. Vu The Khoi (Head), Assoc. Prof. Nguyen Viet Dung.

➲ Group *"Associative rings and algebras"* consists of 7 members: Prof. Le Van Thuyet (Head), Prof. Pham Ngoc Anh, Assoc. Prof. Bui Xuan Hai , Dr. Phan Dan, Dr. Trinh Thanh Deo, Dr. Tran Giang Nam, Dr. Truong Cong Quynh.

➲ Group *"High dimensional approximation"* consists of 9 members: Prof. Dinh Dung (Head), Prof. Ha Huy Bang, Prof. Ian H. Sloan, Prof. Boris Mordukhovich, Prof. Charles Anthony Micchelli, Prof. Patrick Louis Combettes, Dr. Vu Nhat Huy, Dr. Hoang Viet Ha, Dr. Pham Thanh Duong.

➲ Group *"Variational Analysis, Optimization and Control"* consists of 4 members: Assoc. Prof. Huynh Van Ngai (Head), Assoc. Prof. Phan Nhat Tinh, Dr. Ha Binh Minh, Dr. Nguyen Huu Tron.

➲ Group *"Discrete Mathematics"* consists of 9 members: Assoc. Prof. Phan Thi Ha Duong (Head), Assoc. Prof. Ngo Dac Tan , Dr. Do Phan Thuan, M.Sc. Tran Thi Thu Huong, M.Sc. Pham Van Trung, M.Sc. Le Tien Nam, Prof. Moshe Rosenfeld, Asst. Prof. Christophe Crespelle, Prof. Vu Ha Van (from July 10, 2014).

- Group "Algebraic topology" consisted of 2 members: Prof. Lionel Schwartz (Head), Prof. Jean Lannes.

Visitors

- Prof. Aldo Conca, University of Genoa, Italy.
- Prof. Naoki Terai, Saga University, Japan.
- Prof. Rosa Miro-Roig, Barcelona University, Spain.
- Prof. Juan Elias, Barcelona University, Spain.
- Prof. Boris Mordukhovich, Wayne State University, USA.
- Dr. Kevin Perrot, Universidad de Chile
- Asst. Prof. Bo Yu, China Three Gorges University
- Assoc. Prof. Phan Duong Hieu, Paris 8 University

FAST FACTS

82 and 41

82 research fellows and visiting researchers came to work at VIASM from January to June 2014. Among them, there were 41 foreigners or Vietnamese from abroad.

Prof. Pham Ngoc Anh
(Magyar Tudományos Akadémia, Hungary)

WHAT RESEARCHERS SAY?

"VIASM is a paradise. I feel myself a son of fortune that I have 3 months working in the Institute. Actually, VIASM is the working place what I always dream for myself." - *Prof. Pham Ngoc Anh.*

FURTHER INFORMATION

For more information on VIASM's activities, please visit:
http://viasm.edu.vn/activities/

Prof. Jean Lannes and participants of mini-course "Group cohomology and T-functor"

Prof. Le Van Thuyet
(Hue University)

Two members of VIASM's Scientific Council honored

VIASM's Scientific Council have get two good news. First on April, Prof. Dam Thanh Son (University of Chicago, USA) was one of 84 new elected members of USA National Academy of Sciences. Second, Prof. Nguyen Huu Viet Hung (University of Sciences – VNU Hanoi) was one of two scientists received the 2013 Ta Quang Buu Award (announced in May 2014).

Social activities

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.

An Excursion to Lao Cai, made by the group of foreign professors on the occasion of Moduli 2014 Workshop (February 2014).

Up-coming activities

In the coming months, VIASM will organize some other scientific activities as well as assisting the NPDM to implement its tasks.

Some of coming VIASM's scientific activates:

- Summer Program on "PDEs and Applied Mathematics", July 14 – Aug 7, 2014.
- VIASM Annual Meeting 2014, July 26-27, 2014.
- Workshop on Risk Analysis, July 28-29, 2014.
- Seminars on Hodge Theory, July 8 – August 7, 2014.
- Hackathon 2014 August 1-2, 2014.
- Workshop "Equilibrium and Fixed Point Problems: Theory and Algorithms", August 25-29, 2014.

Some NPDM's activities include training schools for students and for gifted high-school students:

- Summer School for students 2014, July 6-26, 2014 in Hanoi.
- Summer School for high-school students, July 27 – August 5, 2014 in Hanoi
- "Mathematics Meeting 2014", August 4-10, 2014 in Ho Chi Minh City

There will be two training schools for math teachers from high schools for gifted students:

- Training school for math teachers, September 22-27, 2014 in Hanoi (for schools in the North)
- Training school for math teachers, October 13-18, 2014 in Vung Tau (for schools in the South)

The announcements of the schools already available on NPDM's site at:
http://viasm.edu.vn/npdm.