National Centre for Mathematics

www.ncmath.org

(A joint centre of TIFR and IIT Bombay)

Advanced Training in Mathematics Schools

www.atmschools.org

(Supported by National Board for Higher Mathematics)

IIT Bombay

tifr

ATM Workshop on Classical Algebraic K - Theory

Venue : TIFR, Mumbai

15th to 24th July, 2013

Organiser : Jean Fasel, Ravi Rao, Nikolai Vavilov

Brief description of ATM Schools

Advanced Training in Mathematics (ATM) Schools are a joint effort of a large number of mathematicians across the country, with support from the National Board for Higher Mathematics. The programmes are conducted in reputed mathematics departments in Summer and Winter every year. The emphasis in these schools is on solving problems, and on the relations between basic areas of mathematics. The schools are intended mainly for Ph.D. students, lecturers and researchers. Applications are now invited for participation in the following school

Workshop on Classical Algebraic K - Theory

One of the purposes of K-theory is the classification of finitely generated projective modules over rings. Similarly, one of the main objectives of higher Grothendieck-Witt groups (aka Hermitian K-theory) is the classification of finitely generated projective modules endowed with symmetric or skew-symmetric isomorphisms. These two fields of research have generated an immense amount of work, by, among others, Bass, Serre, Swan, Suslin, Vaserstein, Bak, Karoubi and is still a very active area of research.

However, the final purpose of the subject is the unstable classification of projective modules possibly endowed with some additional structures like bilinear forms. In this sense, the results of K-theory are not sufficient and extra efforts are needed. The recent introduction of the $\mathbf{A}^1$-homotopy category by Morel and Voevodsky allows to mimic the techniques of algebraic topology in algebraic geometry, and provides a powerful tool to understand the classification of torsors under algebraic groups such as Gl_n, Sp_n and O_n over smooth affine schemes. We feel that making these new techniques available to a broader audience is very important.

The workshop brings together experts, young and old, at TIFR, as well as graduate students and postdocs who want to learn more about the subject and its recent progress on various aspects discussed above such as $\mathbf{A}^1$-homotopy theory and Grothendieck-Witt groups, and the recent developments in the study of exceptional and isotropic reductive algebraic groups as previously studied in the classical groups via the Quillen - Suslin theory.

Eligibility for participation

Ph.D. students, postdocs, researchers in Algebraic K-theory.

Financial Support

Selected participants will be paid AC 3-tier return train fare from their place of work to the venue by the shortest route and will be provided with accommodation and local hospitality.

How to apply

Application form and other information about the programme are available on the following website :

http://www.atmschools.org/2013

Completed application forms should reach :

suslin13@math.tifr.res.in

Last date for receiving completed application is :

February, 28, 2013.

List of selected candidates will be posted on the above mentioned website on :

March 15, 2013

Resource Persons

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