

One Week Workshop
On

Analytical Aspects of Dynamics

November 11-17, 2014

The seven Days Workshop on “Analytical aspects of Dynamics” was organized by the Mathematical Society and Department of Mathematics, Central University of Himachal Pradesh in the Department of Mathematics at Temporary Academic Block, Shahpur, Kangra from November 11th to 17th, 2014.

The basic objective of this program was to give Students and Researchers an exposure to different Aspects of Dynamics. Dynamics is an important area of modern Mathematics that stimulate numerous fascinating linkages with industry and other branches of Mathematics such as Topology, Manifold, Symplectic Geometry, Fluid Dynamics, Operator Theory, Quantum and Statistical Mechanics to name a few, and it is considered as an important tool in mathematician’s kit.

This workshop was inaugurated on November 11, 2014 at 10.00 AM at TAB - Sahpur in the Seminar Hall. In which, eighty participants, distinguished guests and faculty members were present. Dr. S. K. Srivastava, Assistant Professor of Department of Mathematics welcomed the participants, and spoke about the need of such a workshop for the students. Dr. O. S. K. S. Sastri, Chairman, presided over the function. In his Presidential address, he highlighted the importance of dynamics in Physics, Chemistry, Biology, Computer Sciences etc. The Guest-of-Honour, Prof. C. S. Aravinda, Department of Mathematics, TIFR-CAM, Bangalore stressed upon the need to explore professional development Pedagogy by which students explore research-based practices in Mathematics for success and achievements.





There were five resource persons: Prof. C. S. Aravinda, Department of Mathematics, TIFR-CAM, Bangalore, Prof. Paras Ram, Department of Mathematics, NIT-Kurkshetra, Hararyana; Dr. B. C. Chauhan, Department of Physics and Astronomical Sciences, CUHP; Dr. Ayan Chatterjee, Department of Physics and Astronomical Sciences, CUHP; Dr. Vikram Singh, Centre for Computational Biology & Bioinformatics, CUHP respectively on the topics:

1. The geodesic flow on the hyperbolic surfaces
2. Nano Fluids
3. Structures and Dynamics of Elementary Particles and Neutrino Oscillations
4. Symplectic geometry and its applications to mechanics
5. Dynamical Systems from cell to societies



The first academics session began with the lecture of Prof. C. S. Aravinda on 'The Geodesic flow on Hyperbolic surfaces'. In his series of six lectures, he emphasised the importance of visualising mathematical concepts geometrically. He also discussed on the Poincare conjecture, Einstein's theory of relativity, Thurston's geometrization, Hamilton's Ricci flow and Insights of Gromov, Perelman's Ricci flow with surgery in detail. Prof. Paras Ram in his series of six lectures talked on Nanofluids and their applications in Science and Engineering. Dr. B. C. Chauhan delivered two



lectures on the Structures and Dynamics of Elementary Particles and Neutrino Oscillations. Dr. Ayan Chatterjee introduced the concept of 'symplectic geometry and its mathematical formulation with illustrations in his series of six lectures. Dr. Vikram Singh explained the dynamical modeling in biology by emphasising its need to society in his two lectures.



Moreover, four tutorials each of one hours were taken by our Ph. D students Mr. Anil Sharma, Mr. Suresh Chand, Miss Shilpa Sood and Mr. Mahesh Sharma.

Further more at the end of session, students shared their experiences about the workshop. They admitted that this type of workshops are highly inspiring and useful in determining the reserch career in the field of higher mathematics.



During the closing ceremony of the workshop, the Hon'ble Vice Chancellor of CUHP spoke about the need of mathematical education and research in the modern world. He appreciated the Department for taking initiative to organise one week workshop for the benefit of students, research scholars and teachers and Dr. O. S. K. S. Satri, Dean, School of Physical and Material Sciences stressed on the need of such workshops which would help in making students understand how various disciplines are inter-linked, inter-dependent and broaden their scope of learning.





“We are happy and proud to report that the lecture workshop was successful and met all its objectives”