

Workshop on Interferometric Gravity Wave Detectors

A workshop on interferometric gravitational wave detectors was held at CAT from Feb 1 to 3, 1990 to ascertain the feasibility of developing one such detector in India. Twenty five scientists including Profs. B Schutz (University of Wales, U.K.), B Meers, (University of Glasgow, U.K.) and A Brillat (CNRS, Orsay, France), participated in the workshop. Prof. Schutz described the various astrophysical sources of gravitational waves, the global efforts being put to detect these waves and highlighted the significant advantages offered by the interferometric techniques for measurement of the rather small gravity wave induced strains of $\leq 10^{-21}$. The laser interferometer was discussed in detail by Profs. Brillat and Meers. They highlighted the requirements on length and vacuum of the interferometer, seismic isolation, the extremely stringent specifications on lasers and interferometer optics. To apprise the participants of the infrastructure available in the country Dr. D D Bhawalkar, Director, CAT reviewed the status of laser and optics technology in the country and Shri Rajarao, also of CAT, the status of vacuum technology. The TIFR experience with the experiment on the detection of the fifth force was discussed by Prof. S N Tandon (TIFR). The participants were generally of the view that though this experiment is extremely demanding it would be worthwhile to build a moderate size detector (~100m) in the country. It was felt that the development of such a detector would not only provide necessary experience (before undertaking the development of a full scale detector) but also play a useful role among the full scale detectors (3-4 km) being developed around world. A working group was constituted to make a detailed feasibility study for the proposed detector. The workshop was convened by Profs. N K Dadhich and S V Dhurandhar, both from the Inter University Centre for Astronomy and Astrophysics, Pune.

Workshop on Beamline Design Evaluation

Inter-University Consortium (IUC) is planning to construct two beamlines at Indus-I for the use of university scientists. One beamline will be designed to carry out X-ray and UV photoemission studies and the other for soft X-ray absorption experiments. IUC organised a two day workshop at CAT on 26th & 27th June 1990 to discuss the design of these two lines. The workshop was inaugurated by Prof. Yashpal, Chairman, University Grants Commission and was attended by fifty scientists drawn from BARC, CAT, IITs and various universities.

Seminar on Lasers in Science and Technology

The Indian National Science Academy organized a one-day seminar on "Lasers in Science and Technology" on August 8, 1990 at CAT. The seminar was convened by Dr. D D Bhawalkar, FNA, Director, CAT.

The seminar was inaugurated by the INSA President, Prof. M M Sharma. In his address, he stressed the importance of lasers in modern science and technology. In the inaugural session, Dr. D D Bhawalkar briefly described lasers and their properties, highlighted some laser applications in spectroscopy, medicine and fundamental physics and also outlined the progress of CAT during the last four years. This was followed by three sessions in which a number of distinguished Indian scientists reviewed various applications like optical computing, laser photochemistry, laser medicine, laser spectroscopy, single atom spectroscopy, optical communication, lasers in industry, laser fusion, and holography.

Workshop on Lasers and Their Applications

An international workshop on lasers and their applications (IWOLA - 90) was held at CAT during Nov 12-30, 1990. The workshop was attended by nearly 140 participants from all over the world. Fifty four guest speakers from China, France, Germany, India, Malaysia, Pakistan, UK, USA and USSR delivered 83 talks. The talks delivered covered a wide range of topics on laser physics, technology and applications in various fields. A special evening session was arranged in which many experts discussed the present status and future prospects of various applications of lasers. Prof M G K Menon was the chief guest in this session. Further, during this workshop, participants performed a number of experiments on lasers and spectroscopy. A participants conference was also organised in which a large number of contributions were presented as poster papers. Another highlight of the workshop was a two day exhibition where leading companies exhibited their laser and optics related products and literature.

Dr. D D Bhawalkar, Director, CAT was the Chairman and Dr. S A Ahmed of BARC was the Convener of the organising committee for the workshop.

Technical Seminar in Hindi

A two day seminar in Hindi on: "*Vigyan Ki Bhavi Dishayen*", was organised on Dec 5 & 6 by Official Language Implementation Committee, CAT, in collaboration with Hindi Vigyan Sahitya Parishad, BARC, Bombay at CAT, Indore. The seminar was inaugurated by Dr. Maheshwar Dayal, Senior Technical Advisor, DAE, New Delhi. He

also delivered the keynote address on: "Non-Conventional Sources of Energy". A number of prominent scientists delivered very interesting lectures on different topics viz. Nuclear energy, Fusion energy, Lasers, Particle accelerators, High energy astrophysics, Computers and general science. About 150 delegates from various universities, research institutions and other organisations took part in this seminar. Dr. V Manchanda, BARC and Shri S N Vyas, CAT were the Conveners of the seminar.

Advanced Course on Magnet Technology

An advanced course on magnet technology for accelerator applications was organised at CAT from Dec. 13 to 20, 1990 under the auspices of CAT Accelerator School.



The expert panel for the special evening session organized during the International Workshop on Laser and application held at CAT to discuss current status and future prospects of the various Laser applications. From Left to right are: Dr. Yin Lifeng, Dr. Y Lapierre, Prof. R R Dasari, Prof. M G K Menon, Prof. W A Gambling, Dr. K O Greulich, Prof. G V Sklizkov and Dr. D D Bhawalkar.



Seminar in Hindi on "Vigyan Ki Bhavi Dishayen". Seated on the dias are (from left to right) Dr. V Manchanda, Dr. D D Sood (both from BARC), Dr. Maheshwar Dayal, Senior Technical adviser, DAE and Dr. D D Bhawalkar, Director, CAT.

This school has been formed to conduct training courses on various aspects of accelerator systems. In all, thirty three lectures were delivered in this course. Of these, twenty three lectures dealt with the various aspects of magnet technology i.e. magnet design, computer simulation and measurements of magnetic fields, testing of magnetic materials, magnetic power supplies and super conducting magnets. In the remaining ten lectures, other aspects of the accelerators such as RF and Microwave technology, Accelerator physics, Beam diagnostics, Vacuum systems and Control systems were discussed. The lectures were delivered by scientists associated with the accelerator programme of CAT. The inaugural cum key-note address was delivered by Shri S S Ramamurthi who was also the Convener of this course.



Prof. M M Sharma, President, Indian National Science Academy (INSA) presenting the Indira Gandhi prize for popularisation of science to Prof. J V Narlikar, Director, Inter University Centre for Astronomy and Astrophysics. The presentation was made at a special session held during the INSA seminar on Lasers in Science and Technology held at CAT.



Members of Steering committee, CAT visiting one of the accelerator laboratories at CAT. Seen in the photo from left to right are: Dr. S R Gowariker, Dr. Bikash Sinha, Dr. P K Iyengar, Shri S S Ramamurthi and Dr. D D Bhawalkar.