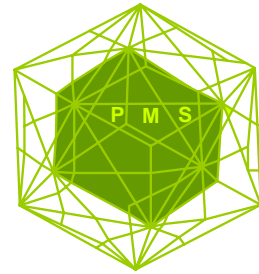


Pakistan Mathematical Society

Newsletter



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EDITORIAL

Unfortunately the present state of mathematics in Pakistan is appallingly lamentable and merits urgent remedial measures for its rectification. It is a fact that two of the principal causes immeasurably detrimental to mathematics education has been due mainly to two reasons, namely, misinformation by some who are simulating to be the exponents of mathematics through their sheer political maneuverings, and the other misuse of impact factors and citations count.

In order to counter the first problem, PakMS proposed establishment of a mathematical body, namely, the National Commission for Mathematics (NCM), at the national level which can correct the wrong doings. It was suggested that NCM be a live organization for mathematics so that it is readily available to all who are related to and concerned with it. It was proposed that in future, all matters relevant to mathematical research and education be referred to the NCM for planning and advice.

The second problem is the misuse of the Impact Factors (IF) as a criterion for ranking scientists. IF was proposed by Professor Atta ur Rahman, a chemist by qualification, as a method to measure the quality of work of scientists, as well as to rate them nationally by ranking them in linear order.

Critics have been pointing out a number of serious defects in using IF. It is basically not practical to have one formula to measure and quantify the work of all scientists across the board because each branch of science is very different in nature from the other. A campaign against the use of the IF to rate scientists was launched immediately. In September 2001, the Federal Ombudsman issued its verdict against the use of impact factors. But HEC has continued to apply the formula.

Over the years, desideratum of a well represented body such as the proposed NCM and the misuse of IF have started showing their adverse effects. The state of mathematics is deteriorating day by day. Millions of rupees have gone in waste. But HEC has not budged from its policies, which it fails to see are detrimental. Unfortunately, HEC still seeks advices from a few hand picked mathematicians and use IF and Citations Count in mathematics on their advice without bothering about the damage that this has caused to mathematics in Pakistan.

THE ABEL PRIZE FOR 2007

The Norwegian Academy of Science and Letters has decided to award the Abel Prize for 2007 to Srinivasa S. R Varadhan, Courant Institute of Mathematical Sciences, New York, “for his fundamental contributions to probability for creating a unified theory of large deviations.”

It took 300 years before Varadhan discovered the underlying general principles and began to demonstrate their tremendous scope, far beyond the classical setting of independent trials.

In his landmark paper “Asymptotic probabilities and differential equations” in 1966 and his surprising solution of the polaron problem of Euclidean quantum field theory in 1969, Varadhan began to shape a general theory of large deviations that was much more than a quantitative improvement of convergence rates.

Varadhan’s theory of large deviation provides a unifying and efficient method for clarifying a rich variety of phenomena arising in complex stochastic systems, in fields as diverse as quantum field theory, statistical physics, population dynamics, econometrics and finance, and traffic engineering. It has also greatly expanded our ability to use computers to simulate and analyze the occurrence of rare. Over the last four decades, the theory of large deviations has become a cornerstone of modern probability, both pure and applied.

Varadhan has made key contributions in several other areas of probability. In joint work with Daniel W. Stroock, he developed a martingale method for characterizing diffusion processes, such as solutions of stochastic differential equations.

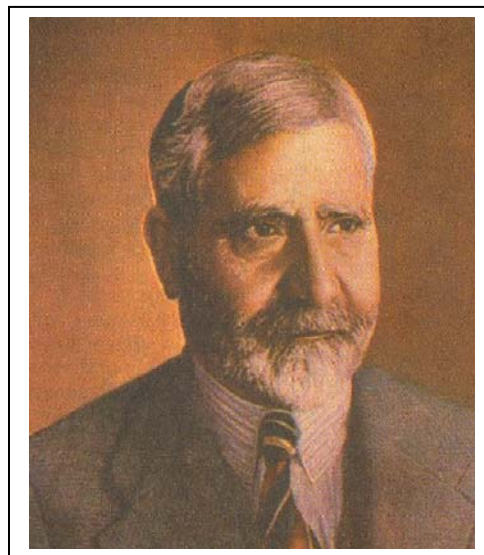
Another major theme is the analysis of hydrodynamical limits describing the macroscopic behavior of very large systems of interacting particles.

PROFESSOR DR SIR ZIAUDDIN AHMAD

Qaiser Mushtaq

Professor Dr Sir Ziauddin Ahmad, former Vice Chancellor and Rector of Aligarh Muslim University, was an eminent mathematician, a top educationist and above all, a very great humanitarian and benefactor of Muslims of the Indo Pakistan Subcontinent. He has left an indelible mark on our education system and our nation owe him a great deal.

He was born in 1877 at Meerut (now Meerath) in the renowned Zuberi family of India. Professor Sir Ziauddin Ahmad showed signs of exceptional



intelligence and diligence while he was quite young. He obtained his M.A in 1897 and M.Sc in 1901. His brilliant academic career won him a scholarship to join the Cambridge University in 1901 from where he took his mathematical Tripos and became a Wrangler.

He obtained his Ph.D. in 1905 from Gottengen University in Germany, and returned to Aligarh in 1906 with all honours to join his alma mater as a Professor of Mathematics.

Professor Sir Ziauddin was a distinguished mathematician and a pioneer in the spread of education. Besides discharging his professional duties, Professor Sir Ziauddin took active interest in all movements connected with the promotion of social, educational and political progress of the subcontinent. He was one of the earliest members of the All-India Muslim League and stuck to the organization till the end of his life. As desired by the Quaid-i-azam, Professor Sir Ziauddin became the Secretary of the newly organized Muslim League party in the Central Assembly of India in 1938.

Professor Sir Ziauddin Ahmad died in London in 1947. He was buried in the University Mosque compound adjacent to Sir Syed Ahmad Khan's grave.

THE FIELDS' MEDALISTS

John Charles Fields' Will established the **Fields Medal**, which has played the role of the Nobel Prize in Mathematics.

The International Congress of Mathematicians at Zurich in 1932 adopted his proposal, and the Fields Medal was first awarded at the next congress, held at Oslo in 1936. Fields Medals were not awarded during World War II so the second Fields Medals were not awarded until 1950.

Fields wished that the awards should recognize both existing mathematical work and also the promise of future achievement. To fit with these wishes Fields Medals may only be awarded to mathematicians under the age of 40. The winners of the medals are given below.

- 1936 L.V.Ahlfors, J.Douglas
- 1950 L.Schwartz, A.Selberg
- 1954 K.Kodaira, J-P Serre
- 1958 K.F.Roth, R.Thom
- 1962 L.V.Hormander, J.W.Milnor
- 1966 M.F.Atiyah, P.J.Cohen, A.Grothendieck, S.Smale
- 1970 A.Baker, H.Hironaka, S.P.Novikov, J.G.Thompson
- 1974 E.Bombieri, D.B.Mumford
- 1978 P.R.Deligne, C.L.Fefferman, G.A.Margulis, D.G.Quillen
- 1982 A.Connes, W.P.Thurston, S-T.Yau
- 1986 S.Donaldson, G.Faltings, M.Freedman
- 1990 V.Drinfeld, S.Mori, E.Witten
- 1994 P-L.Lions, J-C.Yoccoz, J.Bourgain, E.Zelmanov

1998 R Borchers, T Gowers, Maxim Kontsevich, C McMullen
2002 L Lafforgue, V Voevodsky
2004 T.Tao, W.Warner, A.Okounkov, G.Perelman *

* Declined to accept the Fields Medal.

8th INTERNATIONAL PURE MATHEMATICS CONFERENCE 2007

The 8th International Pure Mathematics Conference 2007 (8th IPMC 2007) was a joint venture of Quaid-i-Azam University, Preston University and the Pakistan Mathematical Society. The conference was supported by Higher Education Commission, Pakistan Science Foundation and the Currentage International Marketing (Pvt) Ltd.

It had ten foreign mathematicians from Australia, Hong Kong, Hungary, India, Japan, Russia, UK, and Yemen, 35 speakers from within Pakistan, and 113 participants.

The conference was given international publicity. It was advertised through the PMC Website <http://www.pmc.org.pk> HEC has displayed in its website the conference poster. The homepage of Quaid-i-Azam University, Islamabad, has also advertised the conference. In addition, the American



Mathematical Society, the London Mathematical Society, and the Southeast Asian Mathematical Society have also published information about the conference in their newsletters and websites.

These conferences have provided a novel opportunity for researchers to meet and share their work. Many Ph.D. and M.Phil. students also attended the conference in order to update themselves to a level that is required to do original and better research.

The speakers consisted of experienced and reputable mathematicians working both outside and within the country. These conferences also provided an opportunity to develop collaboration in research between various mathematicians from different institutions and mathematical areas.

Inaugural Session

A simple two-hour inaugural session was arranged on the first day of the 8th International Pure Mathematics Conference 2007. Some 260 invited guests attended the inaugural session. Dr Samar Mubarakmand, Chairman,



National Engineering and Scientific Commission (NESCOM), was the chief guest.



The inaugural session was kept very simple and sombre. Professor Dr Qaiser Mushtaq Convener of the 8th IPMC 2007 and President, Pakistan Mathematical Society, welcomed the chief guest and introduced the conference series. Dr Abdul Basit, Chancellor and President, Preston University introduced his university and deliberated on the purpose of supporting the conference. The Acting Vice Chancellor, Dr Zafar Iqbal Cheema represented Quaid-i-Azam University in his speech and highlighted its achievements especially in mathematics. The chief guest, Dr Samar Mubarakmand, thanked the hosts and appreciated the continual efforts of Professor Dr Qaiser Mushtaq for organizing the international pure mathematics conferences every year. He promised to provide support for the 9th international Pure Mathematics Conference 2008.

Proceedings

The 8th International Pure Mathematics Conference 2007 was thematic. Its theme was Algebra, Analysis, and Geometry. It was a rewarding experience to have so many mathematicians in Pakistan.

The proceedings of the conference spread over three days. The first day there was inaugural session, Registration, a keynote lecture, and two parallel sessions of lectures each comprising 3 lectures. In the evening, from about 6.00 to 9.00, there was sightseeing tour. The second day there were one keynote lecture and two parallel sessions each comprising 9 lectures in each session. In the evening, from 5.10 to 8.00, there was again a sight seeing tour. The second day, there was Conference Dinner at the Holiday Inn. On the third day, there were a keynote lecture and two parallel sessions each comprising seven lectures. Every day there were two servings of tea and a lunch.



The guests were shown Faisal Mosque, Quaid-i-Azam University, Rawal Dam, Constitution Avenue, Daman-i-Koh, and Jinnah Super Market.

The registration fee for foreigners was US \$ 50 and Rs 1500 for the rest. Consequently Rs 197,800.00 were collected as registration fee.

The conference published: Poster, Website, Invitation Cards, Certificates, Booklet containing Abstracts of the papers, and the Proceedings.

The participants were given soft brief cases containing a ballpoint pen, twenty leaves of white paper, and a booklet containing abstracts, brochure, and a copy of the programme. twenty souvenirs were given to the invited speakers.

National participants were provided free accommodation at the Marina International and the foreign invited speakers were put up at the Hotel Margala.

Advertisement

The conference was given international publicity. A colourful poster was sent to the Vice Chancellors and Registrars of all the universities in Pakistan. Invitation cards were also sent to the members of the Pakistan Mathematical Society and prominent scientists for participation. The conference was advertised through the Conference's own Website <http://www.pmc.org.pk> HEC published information of the conference in its newsletter and displayed in its website the conference poster along with web connection. The Homepage of Quaid-i-Azam University, Islamabad, advertised the conference and displayed web connection. The American Mathematical Society and the London Mathematical Society published information about the conference in its Notices, and the Newsletter. The Southeast Asian Mathematical Society also publicised the conference on its website.

The conference was given due coverage in the media. Several news items appeared in the national newspapers, namely, Dawn, Jang, Daily Times, National Herald Tribune, Business Time, Pakistan Observer, Frontier Post, The Post, Jinnah, Din Akhbar, Pakistan on 25th August 2007 Pakistan Television also covered the event and it was shown on PTV Khabarnama.

Concluding Session

In the concluding session each foreign guest was invited to comment on his/her experience of being in Islamabad and on the conference. They all expressed their gratitude and appreciation of the good quality of research papers read at the conference and the hospitality rendered to them.

They were of the view that this useful activity has introduced Pakistan very well to the global mathematical community. Further, it was unanimously resolved that there is a dire need to uplift mathematics in Pakistan. The research, teaching, and curriculum of mathematics need to be improved and the government needs to be urged to take serious note of the state of mathematics. In the end, it was decided that the 9th International Pure Mathematics Conference 2008 would be held in Islamabad in August 2008.



