

Preface

The idea of holding a “National Conference in High Energy Physics and Cosmology” at the Physics Department of Gauhati University, was conceived in 2011, during a discussion with Professor Nimai Singh. In 2012 we started the process, and in June 2012, I wrote to some of the internationally reputed researchers in India, for delivering the invited talks. After getting consent from a good number of them, we launched our website at <http://www.gauhati.ac.in/nchepec> and, over time, everything seemed to fall into place!

The main objective of the conference was to provide a platform to young researchers in High Energy Physics and Cosmology from the north-eastern part of India, to interact with internationally renowned researchers and experts in the field from all over the country, and to present their research works to a wider audience. There were about 80 participants and about 60 papers were presented in various technical sessions. I would like to express my sense of gratitude to all the invited speakers who attended the conference, gave invited talks and interacted with young researchers. I would also like to thank all the participants for their contribution in various technical sessions. Sincere thanks also go to various funding agencies.

All the members of the Organizing Committee, who have contributed in various capacities, for the successful organization of the conference, deserve sincere thanks. I thank the patron of the Organizing Committee, Professor O K Medhi, former Vice Chancellor and Dr Mridul Hazarika, Vice Chnacellor of Gauhati University. People who deserve a special mention are Professor N Nimai Singh, the president of the Organising Committee, Professor Madhurjya P Bora for taking into account the conference website, abstract and paper submission, and publication of this proceedings, Professor Kalyanee Boruah and Professor A Gohain Barua, Dr Banty Tiru, Dr Manas Kalita, and Mr Sanjeev Kalita for their co-operation. And finally, I would like to thank our research scholars Nabaratna, Debajyoti, Shubhankar, Akbari, Chandan, Tapasi, Gayatri, Tapan, Kuldeep, Mintu, Runmi, Amir, Baishali, Nilakshi, Mousumi, and many others, who have really worked very hard towards the smooth running of the conference.

It indeed has been a memorable experience to hold this conference, though the task seemed to be challenging in the beginning. I hope the fruitful interactions among invited speakers and young researchers will turn out be beneficial for the future career of the latter, and to build prospective collaborations, in the field.

Dr Kalpana Bora, *Editor-in-Chief*
Gauhati University
28-11-2013



Message from the Vice Chancellor, Gauhati University

It gives me immense pleasure to know that the proceedings of the NC-HEPC 2013, held during the month of February, 2013 is being published in the Journal of Physics, Conference Series, by the IOP (Institute of Physics, UK). Deliberations in the conference, I am sure, have added new ideas to the pool of the exiting knowledge in the field.

This is a highly commendable effort by the Physics Department of Gauhati University for which they deserve due appreciation from all concerned. I hope that the journal to be published will be immensely beneficial particularly to the students and teachers of physics.

I wish the Organising Committee will endeavour to organise such events in near future.



Dr Mridul Hazarika
Vice-Chancellor, Gauhati University
28-11-2013



Committees

Organising Committee

Professor O K Medhi, former Vice Chancellor, Gauhati University (Patron)
Professor N Nimai Singh (Chairperson)
Dr. Kalpana Bora (Convener)
Professor M P Bora (Secretary)
Mr. Sanjeev Kalita (Assistant Secretary)

Invited Speakers

Professor D P Roy, TIFR, Mumbai
Professor Naba K Mondal, TIFR, Mumbai
Professor D K Choudhury, Gauhati University
Professor Utpal Sarkar, PRL, Ahmedabad
Professor Raj Gandh, HRI, Allahabad
Professor Amol Dighe, TIFR, Mumbai
Professor Nita Sinha, IIMSc, Chennai
Professor S Chakraborty, Vishwa Bharati University, Santiniketan
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Dr A Dutta, Calcutta University