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## **Academic Report (2022-23)**

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**Harish - Chandra Research Institute  
Chhatnag Road, Jhunsi  
Prayagraj - 211019, India**

## Director's Report

By April 2022 we were essentially out of the covid emergency phase. All activities were back to the physical mode. Classes were offline and the number of visitors and visiting students went back to the pre covid levels. I give the highlights for the one year period, April 2022 to March 2023, below.

1. Student admissions and teaching program: We admitted 14 M.Sc. students in Physics and 7 students in Ph.D Physics and 5 in Ph.D Math in 2022. Five M.Sc students graduated in 2022 (one of the earlier small batches). The M.Sc graduating number for 2023 is 18. Eight students finished their Ph.D, four respectively in Math and Physics. The Physics M.Sc program has stabilised in terms of student numbers and teaching. The Math group at HRI has prepared a proposal for starting a M.Sc program from 2024, this will be put up to the Governing Council.

2. Academic events: By April 2022 most travel restrictions had been lifted and physical meetings restarted. Among these we had String Seminar Days (21 to 23 Dec 2022), the Young Quantum Conference (15 to 18 Feb 2023), and the International Conference on Recent Advances in Renewable Energy (CARE-2023), from 2 to 4 Feb 2023, in collaboration with TIFR Hyderabad. In Math we had an NCM workshop on Elliptic Curves, Elliptic functions and Transcendence (24 Nov to 3 Dec 2022), an Infosys Lecture Series by Prof. M. Ram Murty (10 to 19 Dec 2022), a Conference on Algebraic Geometry (12 to 16 Dec 2022), and an Infosys Lecture Series by Prof. Jean-Marc Deshouillers (22 to 25 Feb 2023).

3. **Programs related to Azadi ka Amrit Mahotsav:** 2022 was the 75th anniversary year of Indian independence and all institutions celebrated the occasion as part of the Azadi ka Amrit Mahotsav. At HRI the focus was on involving school and college students in scientific activities. **On 22 Aug we had a Open Day and Quiz for Class IX-X Students,** on Aug 23 and 24 there were Essay Competitions, on Aug 25-26 HRI faculty, students and postdocs gave talks at Colleges in the city, on 27 Aug there was a Open Day & Quiz for Class XI and XII Students, and finally on 28 Aug there was an Open Day & Quiz for BSc Students. In addition to these activities during the focus week we had a year long colloquium program on the History of Indian Mathematics.

4. Faculty appointments: Our appointments had been stalled for a few years due to administrative reasons. Once that hurdle was lifted two years back we tried to build back our faculty numbers by recruiting promising young physicists and mathematicians. During 2022-23 this also coincided with the recruitment drive of the Government of India. Two Physics faculty members joined during the period - Dr. Sayan Choudhury who works on nonequilibrium quantum systems, and Dr. Bhupendra Mishra who works on general relativistic magnetohydrodynamic simulations. Four members joined in Maths: Dr. Jishnu Ray, who works on Iwasawa theory, Dr. B. Sreedhar who works on algebraic geometry, and Dr. Tuhin Ghosh and Dr. Amrita Ghosh, who work on partial differential equations.

5. Changes in the administration: We are in the process of recruiting a new registrar and an accounts officer. At a junior level, we have made six appointments during this period. This includes an Administrative Officer, an assistant for the Physics laboratory, and personnel for the library and general administration. We are also in the midst of