FIFTH SEMINAR ON GENERAL RELATIVITY AND GRAVITATION

The fifth seminar conducted by the Indian Association for General Relativity and Gravitation was held at the Indian Institute of Technology, Powai, Bombay, between December 27-29, 1974, concurrently with the Fortieth Annual Conference of the Indian Mathematical Society. The seminar was inaugurated by Professor V. V. Narlikar, who outlined some of the highlights of the developments of general relativity with historical anecdotes. Professor P. C. Vaidya, President of the Association, spoke about electromagnetic waves with shearing rays in the context of special relativity. He was followed by Professor A. K. Raychaudhuri from Presidency College, Calcutta, who discussed cosmology within the Einstein Cartan framework and the problem of preventing gravitational collapse when magnetic fields are present. In the evening, Professor J. V. Narlikar gave a general talk (common to GRG-5 and the Indian Mathematical Society) on gravitational implosions and explosions in which he described some of the recent work on black and white holes.

On the second day, Professor Nagaraj from Bangalore University discussed the problem of creation of massive scalar fields and the geometry of the underlying spacetime. Dr. Eric Lord outlined a generalization of Einstein's gravitation theory, which is conformally invariant by introducing two scalar fields, leading to two gauges (the Einstein gauge and the atomic gauge) with the help of which he could account for Dirac's large-number hypothesis. Dr. S. M. Chitre spoke about equilibrium structures of dense matter in which general relativity played a prominent part.

Apart from these invited lectures, there were about 30 contributed talks on subjects like exact solutions of Einstein Maxwell equations, gravitational wave solutions, gravitational collapse problems, central redshifts of massive objects, white hole ejection of high energy particles, relativistic magnetofluids, etc.

One highlight of the seminar was a panel discussion on relevant problems of General Relativity and Gravitation. The speakers emphasized the need to tackle either physically realistic problems or problems which yielded new and elegant mathematical techniques.

Nearly 70 participants attended the seminar. The next seminar (GRG-6) will be held at Bose Institute, Calcutta, in the following year. It was also decided to organize a summer or winter school on problems of GRG.

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