



30th MID-YEAR MEETING

INDIAN ACADEMY OF SCIENCES

28-29 June 2019

Satish Dhawan Auditorium, CSIC Building,
IISc, Bengaluru

SPECIAL LECTURE

THE MARVEL AND THE MYSTERY OF QUANTUM MECHANICS – SOME REFLECTIONS



N Mukunda, IISc, Bengaluru



Friday, 28 June 2019



0950–1030



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The creation of quantum mechanics is one of the most dramatic developments in the physics of the 20th century. After the period 1900–1924, during which the Law of Black Body Radiation, wave particle duality for light and for matter, the general quantisation of energy and stability of matter and the laws of spectroscopy had begun to be understood, the mathematical structure of quantum mechanics was discovered amazingly rapidly in just under two years, 1925–1927. On the other hand, the physical interpretation and meaning of this structure required an enormous effort, in which the uncertainty and complementarity principles, the Born probability interpretation and rule and the wave function collapse idea, all played important roles. While quantum mechanics has all along been amazingly successful in numerous applications, many puzzling questions about interpretation remain and continue to be pursued till today, though the focus has shifted from wave particle duality to entanglement and its signatures and consequences. This brief talk will try to give an impressionistic account of these developments, accompanied by comments on the origins of human intuition and the meaning of human understanding of Nature.

Prof. N V Madhusudana will chair

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