



INSTITUTE SEMINAR

22 February 2017

4:00 p.m

Fermion

Speaker:

Prof. Partha Ghose

Affiliation:

NASI Emeritus Professor

Title:

Continuous Transitions between Quantum and Classical Electrodynamics

Abstract:

The Maxwell equations in the presence of sources are first derived without making use of the potentials. The Hamilton-Jacobi equation for classical electrodynamics is also obtained. The manifestly gauge invariant theory is then quantized, and the Hamilton-Jacobi equation in quantum electrodynamics is found. Finally, an interpolating field theory is proposed that describes continuous transitions between quantum and classical electrodynamics. Some examples of how energy flow lines in optics change as one goes from the classical to the quantum limit are then worked out.
