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## The Quantum and the Continuum : Einstein's Dichotomous Legacies

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This talk begins with a summary of some of Einstein's seminal contributions in the quantum domain, like Brownian motion and the Light Quantum Hypothesis, as well as on the spacetime continuum enshrined in the theories of special and general relativity. Following up on Einstein's rationale for postulating the Light Quantum Hypothesis, we attempt to point to a possible dichotomy in his thinking about these two legacies of his, which may have been noticed by him, but was not much discussed by him in the public domain. One may speculate that this may have had something to do with his well-known distaste for the probability interpretation of quantum mechanics as a fundamental interpretation. We argue that Einstein's general relativity theory itself contains the seeds of a dramatic modification of our ideas of the Einsteinian spacetime continuum, thus underlining the dichotomy even more strongly. We then survey one modern

attempt to resolve the dichotomy, at least partly, by bringing into the spacetime continuum, aspects of quantum mechanics with its underlying statistical interpretation, an approach which Einstein may not have wholeheartedly endorsed, but which seems to work so far, with good prospects for the future.

Presenter: Prof. MAJUMDAR, Parthasarathi (RKMVU, Belur)

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