

INDIAN ASSOCIATION FOR THE CULTIVATION OF SCIENCE

2A & 2B, Raja S.C. Mullick Road, Jadavpur, Kolkata-700032, India

Seminar Notice

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School of Physical Sciences

Title:	Lattice QCD calculations of the HVP contribution to muon $g-2$
Speaker:	Bipasha Chakraborty, Department of Applied Mathematics and Theoretical Physics, University of Cambridge, U.K.
Date:	January 8, 2019 (Tuesday)
Time:	4:00 p.m.
Venue:	Physics Seminar Room - C406, 3rd Floor, Centenary Building, IACS
Abstract:	The Muon anomalous magnetic moment is one of the very few quantities in the Standard Model (SM) of particle physics which is both measured in experiment and calculated from theory with impressive accuracy of sub-parts per million (ppm). Intriguingly, there exists a tantalizing discrepancy of more than three standard deviations between the experimental and the SM results of this quantity providing one of the most stringent tests of the theory. The ongoing Fermilab experiment E989 and the upcoming experiment at J-PARC expect a four-fold improvement in the experimental precision (0.16 ppm expected). The theoretical uncertainty in this quantity is dominated by the calculation of the lowest order hadronic vacuum polarisation contribution. Therefore, I present a novel first-principle calculation of this contribution using lattice QCD which would make the discrepancy (if it remains) really compelling in trying to ascertain the possibility of new physics beyond the SM.

All are cordially invited to attend the seminar