ORAL DEFENCE ANNOUNCEMENT

Reetabrata Har

Index of Lattice Dirac Operators

Abstract:

The general topic of the thesis is how to define and compute the index of discretized "lattice" versions of the Dirac operator coupled to a topologically nontrivial gauge field. It involves subtle mathematical issues since the usual definition of the index breaks down in the discretized setting. The new research result concerns a recently introduced "stag-gered" version of the lattice Dirac operator: Its index is shown to correctly reproduce the usual continuum index in the continuum limit where the lattice spacing goes to zero. This result is essential for establishing a secure foundation for the use of this lattice Dirac operator in lattice QCD - the theory of the strong nuclear force in particle physics.

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Time : 3pm-4pm
Venue : SPMS MAS EC1 03-06
Supervisor : Asst. Prof. David Henry Adams