



Contribution ID: 213

Type: Talk

## A filtering technique for the temporally reduced matrix of the Wilson fermion determinant

*Friday, 27 June 2014 15:15 (20 minutes)*

The Wilson fermion determinant can be written in the form of a series expansion in fugacity  $z = \exp(\mu/T)$ , provided that the eigenmodes of the temporally reduced operator are obtained. Since the calculation of all eigenmodes rapidly becomes prohibitive for larger volumes, we develop a method to calculate only the low-energy eigenmodes of the reduced matrix using a matrix filtering technique. This provides a basis of an approximation to neglect uninteresting ultraviolet contributions.

**Primary author:** Dr NAGATA, Keitaro (KEK)

**Co-authors:** IMAKURA, Akira (Department of Computer Science, University of Tsukuba); Prof. HASHIMOTO, Shoji (KEK); Prof. SAKURAI, Tetsuya (Department of Computer Science, University of Tsukuba); FUTAMURA, Yasunori (Department of Computer Science, University of Tsukuba)

**Presenter:** Dr NAGATA, Keitaro (KEK)

**Session Classification:** Algorithms and Machines

**Track Classification:** Algorithms and Machines