



Contribution ID: 298

Type: **Talk**

## Distribution of the $k$ -th smallest Dirac operator eigenvalue : an update

*Thursday, 16 July 2015 08:50 (20 minutes)*

Based on the exact relationship to random matrix theory, we present alternative methods of evaluating the probability distribution of the  $k$ -th smallest Dirac eigenvalue in the epsilon regime of QCD and related gauge theories. By employing (1) the Nystrom-type evaluation of Fredholm determinants and Pfaffians and/or (2) the interrelationship between tau functions for random matrix ensembles at  $\beta=2,1,4$  sharing the weight function, practical troubles and a technical restriction in our previous work [PRD63, 045012 (2001)] are resolved. Especially, this update enables the computation of individual Dirac eigenvalue distributions for a lattice gauge theory with  $4n$  staggered flavors in the pseudo-real representation.

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**Session Classification:** Chiral Symmetry

**Track Classification:** Chiral Symmetry