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

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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 filetering technique. This provides a basis of an approximation to neglect uninteresting ultraviolet contributions.

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