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Anisotropic excited bottomonia from a basis of smeared operators

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Bottomonia plays a crucial role in our understanding of the quark gluon plasma phase. It is thus essential to have a thorough basis which which to examine bottomoniun states. We thus present lattice non-relativistic QCD calculations of bottomonia at temperatures in the range $T \in [47, 380]$ MeV using the FASTSUM Generation 2L anisotropic $N_f = 2+1$ ensembles. The use of a basis of smeared operators allows the extraction of excited state masses at zero temperature, and an investigation of their thermal properties at non-zero temperature. We find that the ground state signal is substantially improved by this variational approach at finite temperature and also apply spectral function investigation methods to the projected or optimal correlation functions.

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