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Nucleons and parity doubling across the deconfinement transition

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The spectrum of nucleons and their parity partners is studied as a function of temperature across the deconfinement transition. We analyse our results using the correlation functions directly, and the Maximum Entropy Method. Both techniques show that there is degeneracy (i.e. parity restoration) in the parity partners' ground states above T_c . This is in accordance with the expectation that parity and chiral symmetry are restored in the deconfined phase. We also find that the nucleon ground state is largely independent of the temperature, whereas there are substantial temperature effects in the negative parity (N^*) channel, already in the confined phase. All results are obtained using our FASTSUM $N_f=2+1$ ensembles.

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