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Using off-diagonal confinement as a cooling method¹ VALERY ROUSSEAU, Louisiana State University, KALANI HETTIARACHCHILAGE, JUANA MORENO, MARK JARRELL, DAN SHEEHY — We show that the recently proposed “off-diagonal confining” (ODC) method (Phys. Rev. Lett. 104, 167201 (2010)) can lead to temperatures that are smaller than with the conventional “diagonal confining” (DC) method, depending on the control parameters of the system. We determine these parameters using exact diagonalizations for the hard-core case, then we extend our results to the soft-core case by performing quantum Monte Carlo simulations for both DC and ODC systems at fixed temperatures, and analysing the corresponding entropies.

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