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Thermodynamic properties of finite systems at zero chemical potential within pNJL model

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We study the thermodynamic properties of finite systems at zero chemical potential and finite temperature, in the frame of the Polyakov loop Nambu-Jona-Lasinio model for two light and one heavy quarks. Finite size effects are considered within the Multiple Reflection Expansion formalism. We analyze some thermodynamic quantities including the equation of state, the interaction measure, the speed of sound, the surface tension, and the curvature energy for different system sizes, and compare our results with lattice QCD data. We find that the system undergoes a smooth crossover for all sizes. Most of the thermodynamic quantities analyzed are sensitive to finite volume effects, specially for systems with radii below ~ 10 fm, and for temperatures around the crossover one.

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