

# XVII Polish Workshop on Relativistic Heavy-Ion Collisions: Phase diagram and Equation of State of strongly interacting matter



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## Finite volume effects on the phase diagram via momentum space constraints

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The QCD phase diagram is expected to be affected by the system size for small volumes. The most common strategy to study these effects in theoretical models is to consider the constraints in momentum space imposed by the finite spatial extension. The different approximations in the various models show similar behavior in some aspects but very different details for the phase diagram and the CEP. To understand these differences, we implemented several scenarios, including low-momentum cutoff and discretization with different boundary conditions, in an extended Polyakov quark-meson model in mean-field approximation [2307.10301]. We show that both the chosen momentum space constraint and the treatment of the vacuum term cause significant changes in the trajectory of the CEP and even in the fate of the chirally broken phase as the characteristic system size is changed.

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