

Inhomogeneous phases of the Gross-Neveu model with a finite number of flavors

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We present some recent results on inhomogeneous phases and baryons in the 1+1-dimensional Gross-Neveu model at finite temperature and finite chemical potential. It is known, that in the large N_f -limit the system shows an inhomogeneous condensate at low temperature and large chemical potential. We address the question whether a breaking of translation invariance is also seen for finite N_f , when quantum fluctuations are not suppressed. Results for $N_f = 8$ and $N_f = 2$ are presented. The simulation results indicate that many qualitative features of the solution for large N_f are rediscovered for finite N_f . The talk is based on two recent works in collaboration with L. Panullo and M. Wagner from Frankfurt and with J. Lenz and B. Wellegehausen from Jena.

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