

Deconfinement and chiral symmetry in effective models with fermions in higher representations

We study the interaction between the chiral and deconfinement transitions using effective models such as the Polyakov extended linear sigma model and the Nambu-Jona-Lasinio model. In this talk we consider fermions in higher representations of both SU(2) and SU(3) gauge groups. Our results motivate further studies of these theories on the lattice and they are also relevant for models of electroweak symmetry breaking utilizing new strong dynamics, and their cosmological consequences. We find that for different fermion representations the qualitative and quantitative behaviour of the order parameters is compatible with the general expectations based on the global symmetries of the underlying theory.

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