

Bernd-Jochen Schaefer: Color Superconductivity in Two-Flavor QCD and its Role in Neutron Stars

Color superconductivity in two-flavor QCD and its relevance to the dense matter equation of state for neutron stars are explored. Using a quark-meson-diquark model truncation within the functional renormalization group framework, we investigate the formation of diquark and chiral condensates and analyze the resulting superconducting phase at high baryon density. We discuss the implications of our findings for the inner core of neutron stars and highlight the role of color-superconducting quark matter in astrophysical contexts.