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Color superconductivity and non-strange hybrid stars

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In this talk I will discuss the three-flavor quark-meson model including color superconductivity, with emphasis on the 2SC and CFL phases. We extend the quark-meson model to the quark meson diquark model. This is a renormalizable low energy effective model that describes the superconductive phases of QCD. We calculate the thermodynamic potential including quark loops. We map out the phase diagram in the μ_B - T plane and sketch how one can apply this model to compact stars. We will present results for the speed of sound, mass-radius relationship, and tidal deformability of non-strange hybrid stars.

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