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Equation of State for Hybrid Compact Stars

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I model hybrid compact stars making use of a self-consistent equations of state. In this approach, the degrees of freedom change from hadrons to quarks in a self-consistent way. This means that the particles appear, in principle, in arbitrary proportions with the interactions leading to the correct behavior for low, respectively high, densities and temperatures. Chiral symmetry restoration and deconfinement phase transitions range from smooth crossovers to sharp first order phase transitions. Effects of strong magnetic fields are analyzed and the achievement of two solar masses stars is discussed.

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