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The role of the equation of state in compact star physics and phenomenology

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Compact star physics is in fact a way to study the state of matter under conditions of extreme compression. However, there are no direct experimental or observational methods for investigating the internal structure and content of stellar matter. Therefore, the theoretical modeling of different situations and the presence of tension in explanations of observational data on compact stars are very important. The equation of state of a high-density substance made it possible to raise the question of the possibility of exotic states of matter, such as the quark plasma. These aspects are in the focus of research on the structure and evolution of stars, which is the main content of the phenomenology of compact stars.

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