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## **Nuclear physics and astronomical observations of compact objects**

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Overarching questions such how and where are the heavy elements synthesized, and what is the mechanism of stellar explosions, like supernovae, have been the subject of study of nuclear astrophysics for the last decades. These puzzles are closely connected to the behavior of matter under extreme density and temperature conditions. Our current understanding relies on simulations, micro-physics input, observations and the connections among them. In this talk, I shall discuss the influence that the nuclear physics input, e.g. weak processes and the nuclear matter Equation of State, has on the above mentioned astrophysical phenomena.

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