



## **Compact stars and core collapse in scalar-tensor theories of gravity**

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One of the most popular generalizations of Einstein's theory of general relativity consists in adding one or more extra degrees of freedom in the form of scalar fields non-minimally coupled to the metric. Here we model neutron stars and the collapse of stellar cores in super nova explosions in spherical symmetry in the framework of scalar-tensor theories of gravity. We discuss families of static neutron star models, the fine structure of these families in the parameter space of the theory and the dynamics, including gravitational wave emission, in the collapse of stellar cores.