

**NewCompStar: EXPLORING FUNDAMENTAL PHYSICS
WITH COMPACT STARS**

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Compact stars, such as neutron stars, strange stars or hybrid stars, are unique laboratories that allow us to probe the building blocks of matter and their interactions at regimes that terrestrial laboratories cannot explore. These exceptional objects have already led to breakthrough discoveries in nuclear and subnuclear physics, QCD, general relativity and high-energy astrophysics. The upcoming generation of observatories and gravitational-wave detectors will continue to nurture innovative and fundamental discoveries complementary to those achieved through the nuclear and subnuclear experimental facilities. The MPNS COST Action MP1304 Exploring fundamental physics with compact stars (NewCompStar) will be presented. The Action was officially started on Nov. 25 2013 and represents the natural evolution of an ESF-funded RPN, CompStar. The new COST Action brings together the leading experts in astrophysics, nuclear physics and gravitational physics to address this fascinating but challenging research area through an interdisciplinary approach. In addition to an innovative and well-defined research agenda, the network will provide a dedicated training program for a new generation of scientists with wide-ranging expertise and multiple skills oriented also towards knowledge transfer and innovation.