NUCLEAR AND PARTICLE PHYSICS ASPECTS OF EXPLOSIVE ASTROPHYSICS AND MULTIMESSENGER ASTRONOMY

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Teaching staff

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Program of the course:

1) Introduction to Nuclear Astrophysics.
2) Measurements of nuclear reactions cross sections important for nuclear astrophysics: experimental techniques and indirect methods.
3) Short introduction to particle physics.
4) Explosive phenomena as a link between nuclear and particle astrophysics.
5) Novae, Super Novae and other violent events in the cosmos: multi-messenger astrophysics.
6) Big Bang nucleosynthesis.

Bibliography:

1) Cauldrons in the cosmos, Claus E. Rolfs and William S. Rodney, University of Chicago Press.
2) Physics of Neutrinos and Applications to Astrophysics, M. Fukugita and T. Yanagida, Springer.
3) Probes of multimessenger astrophysics, M. Spurio, Springer.
4) Selected papers in the field and slides provided by the Lecturers.