

Workshop for young scientists with research interests focused on physics at  
FAIR



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## Theoretical nuclear structure and astrophysics at FAIR

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Next generation of radioactive ion beam facilities like FAIR and detectors like AGATA will open a bright future for nuclear structure and nuclear astrophysics research.

In particular, very exotic nuclei (mainly neutron rich) isotopes will be produced and a lot of new exciting experimental data will help to test and improve the current nuclear models. In addition, these data (masses, reaction cross sections, beta decay half-lives, etc.) combined with the development of better theoretical approaches will be used as the nuclear physics input for astrophysical simulations.

In this presentation I will review some of the state-of-the-art nuclear structure methods, their comparison with recent experimental data and their application in nucleosynthesis calculations.

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