

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



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From dripline to dripline: Nuclear astrophysics in the laboratory

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Nuclear astrophysics is the study of the origin of the elements, nuclear energy generation in space, and the nature of ultradense matter. Experimental nuclear astrophysics studies require access to nuclides across nearly the whole nuclear chart, from the proton dripline to the neutron dripline. In order to reach these extremes, cutting-edge rare isotope facilities such as FAIR are required. I will present an overview of the current status of experimental work in nuclear astrophysics, focusing on selected highlights from the rare isotope facilities GSI, NSCL, RIKEN, and HIRFL. Open research questions will be discussed through the lens of physics opportunities for NUSTAR at FAIR. Connections to recent advances in nuclear structure will also be discussed.

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