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The Weird Chemistry of Globular Cluster - Nuclear Physics to the Rescue?¹

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Globular clusters are the oldest structures to form in the galaxy and thus their ages provide a wealth of information about the evolution of the Milky Way. These ages assume that we understand stellar evolution and the chemical history of the clusters and both have been called into question. For example, clusters exhibit anomalous elemental and isotopic abundance patterns as compared with isolated stars, the best studied being the anticorrelation between sodium and oxygen. Various models have been constructed to explain this effect and some call into question the initial assumptions that go into ages of clusters. This talk will focus on measurements at LENA of the nuclear reactions that give rise to the observed Na vs. O and whether or not we can constrain the model space using nuclear physics.

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