Contribution ID: **16** Type: **Poster**

High-dispersion spectroscopic observations of r-process elements including thorium in solar metallicity and mildly-metal-poor stars

Thursday, 31 August 2023 14:15 (5 minutes)

The origin of the r-process was unknown for many years, but in 2017, neutron-star merger (NSM) was observed by gravitational waves (Abbott et al., 2017). The NSM is found to be the origin of the r-process by photometric and spectroscopic observation. However, NSM alone is unable to explain the origin of the r-process. For example, investigation of stellar abundances has found stars with high [Th/Eu] value (Actinide-Boost stars), but the origin of Actinide-Boost stars is unclear. The existence of such stars suggests that the r-process has more than one origin (Holmbeck et al., 2018, Yong et al., 2021). Although it is important to determine the Th abundance in many stars to clarify the origin of the r-process, there have been few observations of Th in [Fe/H] > -1.5 (Mishenina et al., 2022). Therefore, we observed such stars with Nayuta/MALLS and obtained Subaru/HDS archive data. We obtained a number of r-process abundances including Th, over ten objects in [Fe/H] > -1.5. As a result, the value of [Th/Eu] is constant and independent of the metallicity, there is no Actinide-boost stars in [Fe/H] > -1.5. These results are important to clarify the origin of Actinide-boost stars. Identifying the origins of Actinide-boost stars is to investigate the origins of the r-process.

Primary author: FURUTSUKA, Kurumi (University of Hyogo)

Co-author: HONDA, Satoshi (University of Hyogo)

Presenter: FURUTSUKA, Kurumi (University of Hyogo)

Session Classification: Poster Session