Contribution ID: **53** Type: **Poster**

Evidence for r-process production by rare supernovae in the low metallicity environment

Monday 9 June 2025 19:00 (5 minutes)

The decreasing trend of the [Eu/Fe] feature caused by stars in the Large Magellanic Cloud (LMC) is followed by a nearly constant value; this trend is generally attributed to an onset of the delayed Fe release from type Ia supernovae (SNe), which is the same interpretation of the [α/Fe] feature. However, this feature appears in the LMC at [Fe/H] of approximately -0.7, which is significantly higher than that for the [α/Fe] case ($\approx$-2). We propose that this [Eu/Fe]-knee feature is created by a fade-out of core-collapse SNe producing r-process elements. The metallicity threshold for the occurrence rate of these r-process SNe at a subsolar is nearly identical to that for long gamma-ray bursts.

Author: Dr TSUJIMOTO, Takuji (National Astronomical Observatory of Japan)

Presenter: Dr TSUJIMOTO, Takuji (National Astronomical Observatory of Japan)