

Plenary Talk

PV II Mon 9:00 U Audimax

Interstellar radionuclides identified in deep-sea archives —

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The Interstellar Medium (ISM) is continuously fed with new nucleosynthetic products. The solar system moves through the ISM and collects dust particles. Therefore, direct detection of freshly produced nuclides on Earth provides insight into recent and nearby nucleosynthetic activities. ISM radionuclides trapped in deep-ocean archives include ^{60}Fe ($t_{1/2}=2.6$ Myr), ^{26}Al (0.7 Myr) and ^{244}Pu (81 Myr). These nuclides can be measured with Accelerator Mass Spectrometry

(AMS) with high sensitivity.

Recent measurements, which continued pioneering work at TU Munich, demonstrate a global ^{60}Fe influx and is evidence for exposure of Earth to recent (≤ 10 Myr) supernova explosions. Unknown is still the site where the heaviest elements are made in nature. Very low concentrations measured for interstellar ^{244}Pu , however, disfavour supernovae as the predominant producing site for heavy-element nucleosynthesis.

I will present new results, measured for ^{60}Fe at the ANU and for ^{244}Pu at ANSTO with unprecedented sensitivity. These data provide new insights into their concomitant influx and their ISM concentrations over a time period of the last 11 Myr.