

Self Introduction[Shinya Aoyama]

I'm from Hyogo,Japan! I'm living in Kyoto now.



Kobe University
Master's 1st year
student!



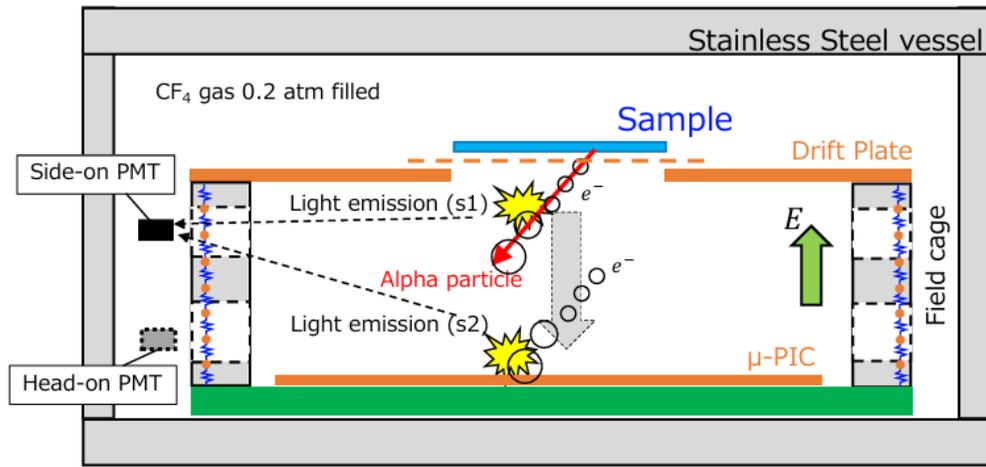
Himeji Castle, In Hyogo

Hobby

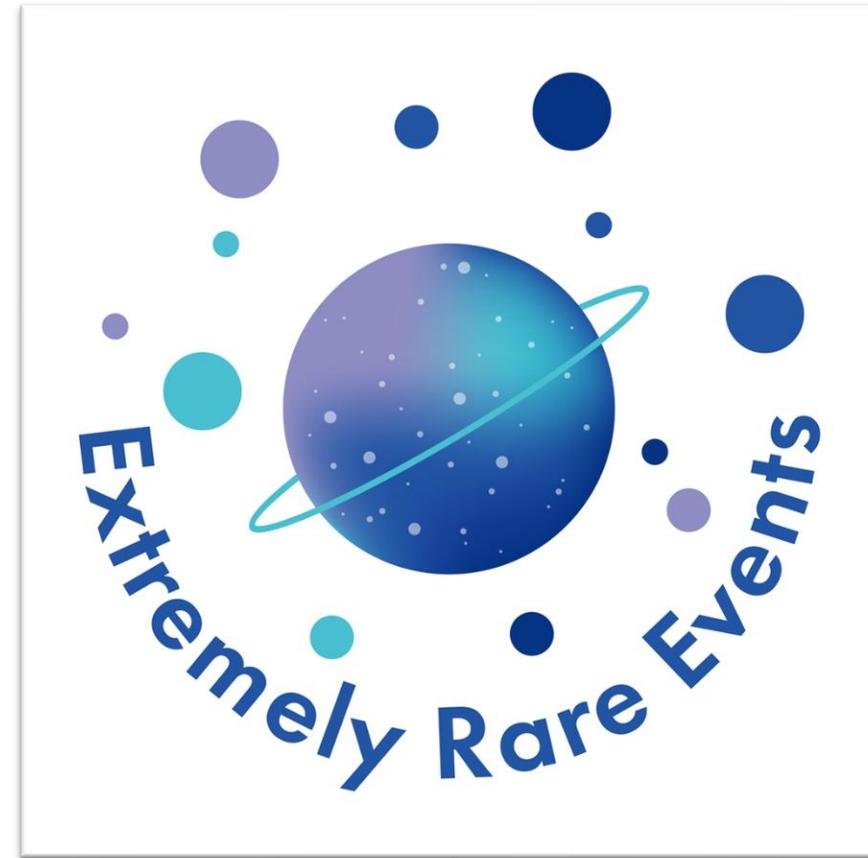


My Recerch

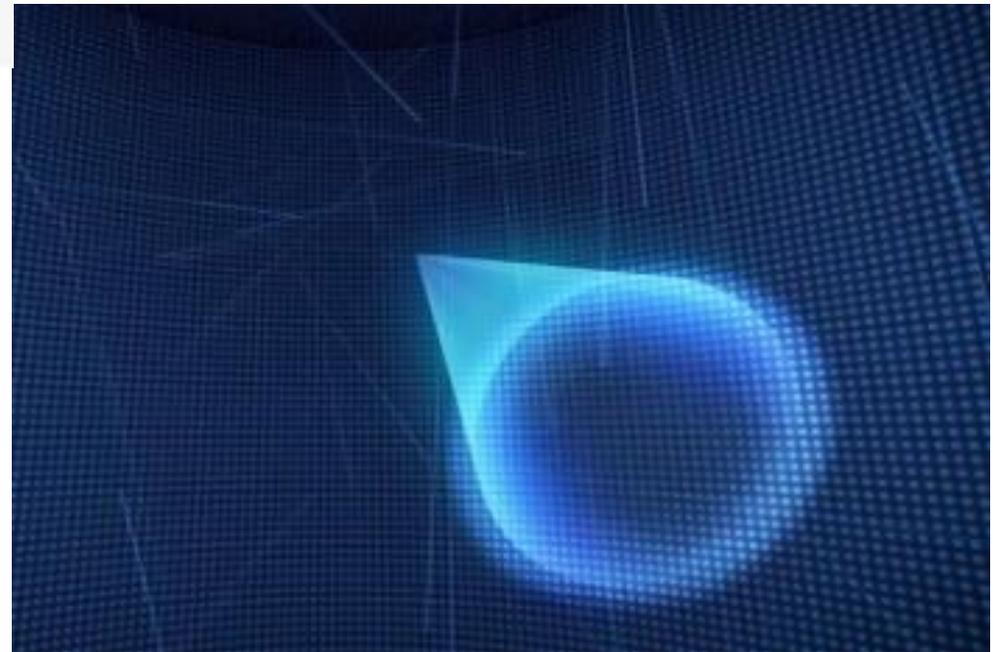
- Collaborator of the SK and HK experiments.
 - Focused on background reduction



Alpha-particle Imaging CHAMber



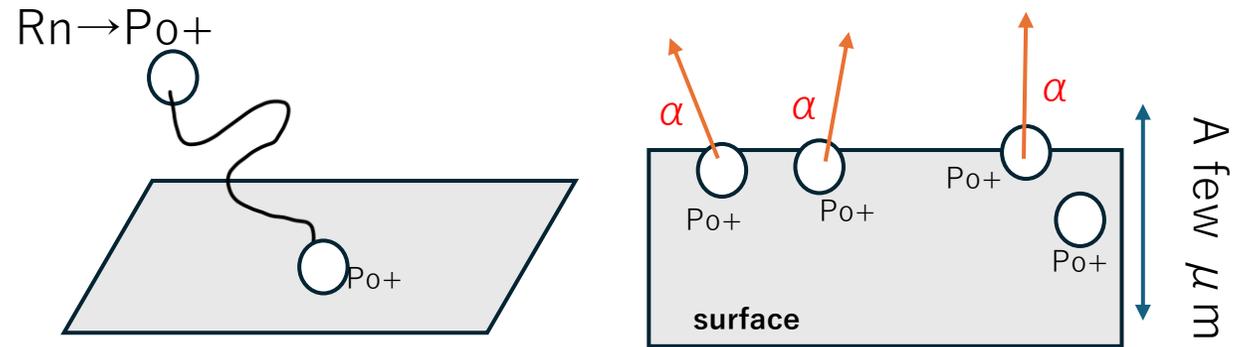
In VSoN



Back up

Slide IV-V: Graduate studies

- Development of an Alpha-particle Imaging CHAMber (AICHAM)



- Background of the Study
 - To reduce** radioactivity of the detector materials and the experimental environment is an important issue for **rare-event-search experiments**.
 - Such as **the search for dark matter** or **neutrinoless double beta decay**
 - Even if a material is **very clean**, it can get **contaminated just by being in the air**.
 - Radon gas (Rn)** in the air breaks down and produces **Po-218**, which can **stick to the surface** and go **a few microns deep**.
 - Po-218 turns into **Pb-210**, which stays for a long time (half-life = 22 years).
 - Pb-210 becomes **Po-210**, which gives off **strong alpha particles (5.3 MeV)** for many years.

- Why a Position-Sensitive Alpha Detector is Needed
 - To **see exactly where** the contamination is on the material
 - To **understand how** the contamination got there
 - To **separate real signals** from background noise
 - To **clean or remove** only the dirty parts
- Growing Importance in Other Fields
 - In the **semiconductor field**
 - Even tiny alpha particles can cause **soft errors** in microchips.
It is important to check materials for **low radioactivity** to keep devices reliable.
 - In the **medical field**
 - These detectors help find **unwanted radiation sources**,
improving the **safety and accuracy** of treatments using radioactive materials.