Contribution ID: **105** Contribution code: **RTA-7** Type: **Oral Presentation**

Study on natural iodine isotope system

Wednesday, 23 October 2024 15:50 (20 minutes)

Iodine isotopes (stable 127I and long-lived radioactive 129I with half-life 15.7 million year) in natural environment have potentially various applications, utilizing as a dating tool or an index of comic-ray intensity variation with millions to 10-million-year time scale. For these purposes, iodine isotope system in natural environment should be understood comprehensively. Important issues are:
1. Iodine dynamics in the environment.
Inventories of iodine in various sites and transition among them should be elucidated.
2. 129I sources and assimilation of the iodine dynamic system.
Production rate of 129I by the cosmic ray and 238U spontaneous fission and how well is the produced 129I is mixed with the ambient iodine should be evaluated. This is related to the equilibrium 129I/127I ratio. Does the globally equilibrium 129I/127I ratio exist like radiocarbon?

Student Submission

No

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Session Classification: Radiohalide Techniques and Applications

Track Classification: Radiohalide Techniques and Applications