

## Sulfur isotope ratio of aerosol collected in Kosa period.

# Fumitaka Yanagisawa[1], Naofumi Akata[2]

[1] Dep. Earth and Environmental Sci., Fac.Sci., Yamagata Univ, [2] IES

Deposition rate of non-sea salt sulfate in wet deposition in Japan increases in winter. The sulfur isotope ratios of non-sea salt sulfate ranged from 0 to +15 ‰ and showed seasonal variation, with an increase in winter (December and January). This seasonal variation suggests that non-sea salt sulfate in wet deposition is derived from a source, having a higher sulfur isotope ratio in winter than in other seasons. Sulfur isotope ratios were measured for coals used in East Asia (China, Mongolia and Russia). The average sulfur isotope ratio of coals used in 30-20N is -3.8 ‰, that of coals used in 60-30N is +7.4 ‰, and that of northeastern Chinese coals (42-39 N) is +9.6 ‰. The sulfur isotope ratios of non-sea salt sulfate collected in Japan in the winter were in agreement with the sulfur isotope values for coals in northeastern China.

Sulfur isotope ratios of non-sea salt sulfate in aerosol in Japan ranged from 0 to +15 ‰ and showed seasonal variation, with an increase in winter.

Sulfur isotope ratios of non-sea salt sulfate in Red Snow (snow mixed with Kosa particles) fell in January and March 2001 were measured. Sulfur isotope ratios of non-sea salt sulfate were about 10 ‰. Desert sand and loess were collected from an arid region in China. The sulfur isotope ratios of sulfate in sand and loess, ranged mainly from +5 to +18 ‰. Sulfur isotope ratios of sulfate in aerosol in Taiyuan, China, were about 10 ‰ in Kosa period. The sulfur isotope ratios of non-sea salt sulfate in Red Snow agree with the sulfur isotope values of sulfate in sand.

This study was partly supported by Special Coordination Funds for Promoting Science and Technology from Ministry of Education, Culture, Sports, Science and Technology, Japan.