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# マグニチュード９の地震が与えた機内水の安定同位体比の変化に関する研究
# Effect of massive earthquake with magnitude nine to variation in stable isotope ratios of in-flight water

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Sampling of in-flight water (the water used for hand washing in airplane lavatories) had been conducted on passenger flights nearby Narita International Airport (NRT) in suburbs of Tokyo, Japan since July 2009. It had been measured that the variation between -3.8 and 0 [per mil] for stable nitrogen isotope ratios in the nitrate ion in the in-flight water when airplane was taking off or landing until before strong earthquake with magnitude nine on March 11,2011 in offshore East Japan. However after the right before the earthquake this tendency had been changed and it had been measured variation between +0.986 and +8.26 [per mil] for stable nitrogen isotope ratios in the nitrate ion in the in-flight water when airplane was taking off.

It is known that the values of delta $^{15}/^{14}$ N for sediments and metamorphic rock are higher than atmosphere (Jia Y 2006: ”Nitrogen isotope fractionations” Geochim Cosmochim Acta 70:5201-5214). Hence the right before the earthquake $^{15}$N might have supplied to atmosphere nearby at NRT from sediments and metamorphic rock.

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