

窒素飽和過程における渓流水硝酸イオン濃度および 硝酸イオン中酸素の安定同位体比

田 林 雄** 山 室 真 澄*

Oxygen-Stable Isotope Ratios of Nitrate and Nitrate Concentration in Stream Water during the Course of Nitrogen Saturation

Yu TABAYASHI** and Masumi YAMAMURO*

Abstract

We measured major inorganic ions and stable isotope ratios of nitrogen and oxygen of nitrate in the stream water in the Chichibu region during the course of nitrogen saturation. Nitrate concentration showed a high west-east gradient in the study area. Stable isotope ratios of oxygen in nitrate showed clear relationships with nitrate concentration. A direct relationship was apparent in the lower range of nitrate concentrations in that the stable isotope ratio of oxygen increases as the nitrate concentration increases. On the other hand, oxygen stable isotope ratios of nitrate hardly increase in the middle to higher concentrations of nitrate. This phenomenon may suggest that the oxygen stable isotope ratios of nitrate reflect a phase of the nitrogen saturation in the forest ecosystems.

Key words : nitrogen saturation, nitrogen combustion, nitrate, oxygen stable isotope ratio of nitrate, stream water

キーワード : 窒素飽和, 燃焼起源窒素, 硝酸イオン, 硝酸イオンの酸素安定同位体比, 渓流水

* 東京大学大学院新領域創成科学研究科

+ 現所属 : 独立行政法人産業技術総合研究所地質情報研究部門

* Institute of Frontier Sciences, The University of Tokyo

+ Present address: Institute of Geology and Geoinformation (IGG), AIST (National Institute of Advanced Industrial Science and Technology)