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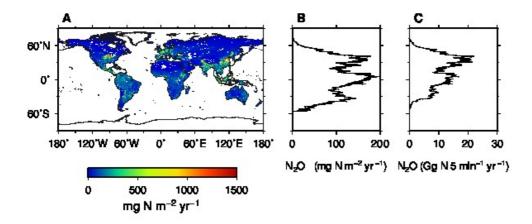
## 経験モデルを用いた土壌 N<sub>2</sub>O ガス放出の全球スケールの推定 Global estimation of soil nitrous oxide emission using a semi-empirical model

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Nitrous oxide  $(N_2O)$  flux is one of the major greenhouse gas fluxes from terrestrial ecosystems.  $N_2O$  is generally released from soil surface to the atmosphere. In this study, a semi-empirical model was developed through modifying a model for soil  $CO_2$  flux (Raich et al. 2002), and the global distribution of  $N_2O$  flux from soil was examined. The model consists of the functions of nitrogen, air temperature, and precipitation and the parameters of the functions were determined using a global dataset of  $N_2O$  emission (Stehfest and Bouwman 2006). The model was applied at a spatial resolution of 5-minute and at a monthly time resolution.

The preliminary calculation revealed that the total amount of  $N_2O$  emission was 14 Tg N yr<sup>-1</sup>, and the monthly flux showed a clear seasonality, and was highest in August and lowest in February. The dry natural land is the major source of  $N_2O$  emission while the dry cultivated land was the second major source. Latitudinally, the flux was high around 30 — 40 degreeN and 10 degreeS — 10 degreeN. These results were still based on limited data, especially for wet ecosystems, and will be updated in future.

キーワード: 土壌, 亜酸化窒素, モデル, 窒素 Keywords: soil, nitrous oxide, model, nitrogen



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