Innovation in global soil biogenic NO emission calculation

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We present a prototype version of a new algorithm for calculating NO emissions from soils in atmospheric chemistry models. The algorithm is based on a compilation of measured NO emission from soils, and model output for soil temperature, water filled pore space, soil carbon and nitrogen, along with bulk density pH-value and clay content from a global soil database. The correlation coefficients (R^2) of the significant (p-value < 0.1) linear models in our analysis are between 0.11 and 0.75. The calculated dependencies on physical and chemical parameters used here result in higher global soil biogenic NO fluxes compared to previously published values. Some deficits still exist, which will be discussed, as well as the potential for this approach to provide a general improvement in modelled soil NO emission.