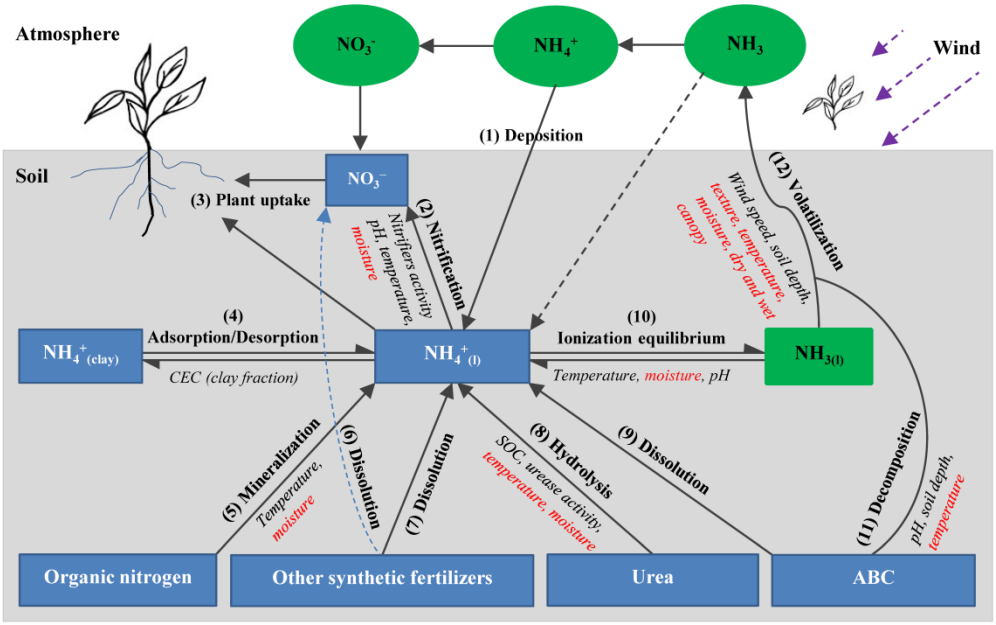

Fig. S1 CNMM-DNDC model-included processes determining ammonium (NH_4^+), ammonia (NH_3) concentrations in the liquid phase of a soil, and ammonium bicarbonate decomposition (ABC), and thus volatilization of this nitrogenous gas in the uplands. This figure was drawn by decoding the original and revised Catchment Nutrient Management Model - DeNitrification DeComposition (i.e., CNMM-DNDC) model. $NH_4^+{}_{(clay)}$ denotes the NH_4^+ adsorbed by clay minerals. $NH_4^+{}_{(l)}$ and $NH_{3(l)}$ are referred to as dissolved NH_4^+ and NH_3, respectively, in the liquid phase of a soil. Bold word(s) aside arrow(s) indicate(s) the nitrogen transfer/transformation process(es). Italic word(s) aside arrow(s) is/are the regulating factor(s) for the corresponding process(es). The influencing factors with their parameters/parameterizations/definitions fully inherited from the original DNDC95 (http://www.dndc.sr.unh.edu/) with minor changes by Cui et al. (2014) are shown in black, and those newly added/calibrated in the studies of Dubache et al. (2019) and Li et al. (2019) are displayed in red.

Reference

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