



FIG. 1. The multiple element limitation (MEL) model. C, N, P, and water stocks and fluxes are distinguished respectively by solid, dotted, dashed, and gray lines. Two-headed arrows indicate fluxes in both directions. Mineral P is shown as primary ( $1^\circ$ ) and secondary ( $2^\circ$ ). For clarity, only external fluxes have been labeled:  $U_C$ , photosynthesis;  $R_A$ , autotrophic respiration;  $R_{Cm1}$  and  $R_{Cm2}$ , heterotrophic respiration from Phase I and Phase II soil organic matter (SOM);  $I_i$ , inputs of  $i$ ;  $L_i$ , leaching loss of  $i$ ;  $T_{DNtr}$ , denitrification; DOM, dissolved organic matter;  $I_{ppt}$ , precipitation;  $I_{nt}$ , evaporation of intercepted water;  $U_w$ , water uptake and transpiration;  $Q$ , runoff and deep percolation.