

Terms	Name	Units
CH_4	CH_4 concentration	mg m^{-3}
J_{CH_4}	CH_4 flux uptake	$\text{mg CH}_4 \text{ m}^{-2} \text{ month}^{-1}$
C_{CH_4}	Atmospheric CH_4 concentration	ppb
$\text{CH}_4 \text{ min}$	CH_4 threshold	ppb
F_{CH_4}	CH_4 flux through L	$\text{mg CH}_4 \text{ m}^{-2} \text{ month}^{-1}$
z	Depth in the soil profile	cm
L	Depth of 99.9 % penetration of atmospheric CH_4 into the soil	cm
D_{CH_4}	Diffusion coefficient of CH_4 into soil	$\text{cm}^2 \text{ s}^{-1}$
k_d	CH_4 oxidation activity	s^{-1}
$D_{0\text{CH}_4} = 0.196$	CH_4 diffusion in free air at standard temperature and pressure (STP) of 0 °C and 1 atm pressure	$\text{cm}^2 \text{ s}^{-1}$
G_T	Soil temperature response	°C
G_{soil}	Soil structure response	dimensionless
Φ	Total pore volume	$\text{cm}^3 \text{ cm}^{-3}$
ρ	Bulk density	$\text{cm}^{-3} \text{ g}^{-1}$
$d = 2.65$	Soil particle density	g cm^{-3}
Φ_{air}	Air-filled porosity	$\text{cm}^3 \text{ cm}^{-3}$
θ	Soil water content	%
w	Saturation soil water potential	MPa
b	Clay soil content factor	dimensionless
f_{clay}	Clay soil content	%
k_0	Base oxidation rate constant for uncultivated moist soil at 0 °C	s^{-1}
r_{SM}	Microbial CH_4 oxidation, soil moisture response	dimensionless
r_T	Microbial CH_4 oxidation, temperature response	dimensionless
r_N	Microbial CH_4 oxidation, nitrogen response	dimensionless
N_{soil}	Nitrogen deposition into soil	$\text{g N m}^{-2} \text{ month}^{-1}$
$\alpha = 0.33$	Average coefficient of N deposition inhibition	% mol N ⁻¹