

Formules utilisées pour le calcul des âges

Nom	CGES
Date	18/11/1997
Aquifère	Miocène
$\delta^{13}\text{C}$	-21
$A^{14}\text{C}$	100
$\delta^{13}\text{C}$	0
$A^{14}\text{C}$	0
$A^{14}\text{C}$	5,7
Erreur	0,3
$\delta^{13}\text{C}$	-6,70
T°C	20,7
°K	=Tc+273,15
pH	7,66
mesuré	4,00
K_1	=14,8435-3404,71/T-0,03278*T
K_2	=6,4998-2902,39/T-0,02379*T
mol/l	=(0,5*10 ⁻³ *TAC*10 ^{^(-2*pH)})/((10 ^{^(K1_+K2_)})+(10 ^{^(K1_-pH/2)})
mol/l	=(0,5*10 ⁻³ *TAC*10 ^{^(-pH)})/((10 ^{^(K2_)} +0,5*10 ^{^(-pH)})
mol/l	=((10 ^{^(K2_)} *0,5*10 ⁻³ *TAC)/(10 ^{^(K2_+0,5*10^{^(-pH)})})
mol/l	=H2CO3+HCO3+CO3_
mol/l	=HCO3+2*CO3_
ϵ_{ag}	=-373/T+0,19
ϵ_{gb}	=-9483/T+23,89
ϵ_{cb}	=-4232/T+15,1
TAMERS	=((H2CO3+0,5*HCO3)*A14C_sol+0,5*HCO3*A14C_mat)/(H2CO3+HCO3)
PEARSON	=((A14C_sol-A14C_mat)*(d13C-d13C_mat)/(d13C_sol-d13C_mat))+A14C_mat
MOOK	=Ao_TAMERS+(0,5*(A14C_sol-A14C_mat)*(d13C*(H2CO3+HCO3)-(H2CO3+0,5*HCO3)*d13C_sol-0,5*HCO3*11))/((0,5*(d13C_sol-11)-eg_b)*(H2CO3+HCO3))
ϵ_{gb}	=((A14C_sol-A14C_mat)*(d13C*(H2CO3+HCO3)-(H2CO3+0,5*HCO3)*d13C_sol-0,5*d13C_mat))/((d13C_sol-eg_b-d13C_mat)*(H2CO3+HCO3))
ϵ_{bc}	=((A14C_sol-A14C_mat)*(d13C*(H2CO3+HCO3)-(H2CO3+0,5*HCO3)*d13C_sol-0,5*d13C_mat))/((d13C_sol-(-ec_b)-d13C_mat)*(H2CO3+HCO3))
F & G	=SI(keq_b>0;Ao_TAMERS+keq_b;Ao_TAMERS+keb_c)
ϵ_{ag}^{14}	=2,3*ea_g/1000
ϵ_{gb}^{14}	=2,3*eg_b/1000
équilibrant	=(A14C_sol*(1+e14a_g)*H2CO3+0,5*HCO3*(1+e14g_b)*A14C_sol+0,5*HCO3*A14C_mat)/(H2CO3+HCO3)
ϵ_{gb}	=((A14C_sol-A14C_mat)*(d13C*(H2CO3+HCO3)-0,5*HCO3*(d13C_sol-eg_b)+H2CO3*(d13C_sol+ea_g)-0,5*HCO3*d13C_mat))/((d13C_sol-eg_b-d13C_mat)*(H2CO3+HCO3))
ϵ_{bc}	=((A14C_sol-A14C_mat)*(d13C*(H2CO3+HCO3)-0,5*HCO3*(d13C_sol-eg_b)+H2CO3*(d13C_sol+ea_g)-0,5*HCO3*d13C_mat))/((d13C_sol-(-ec_b)-d13C_mat)*(H2CO3+HCO3))
F & G éq	=SI(keq_eg_b>0;TAMERS_eq+keq_eg_b;TAMERS_eq+keq_eb_c)
AIEA	=((d13C-d13C_mat)*(A14C_sol-A14C_mat)+(d13C_sol-eg_b-d13C_mat)*A14C_mat)/(d13C_sol-eg_b-d13C_mat)
EVANS	=A14C_sol*((d13C+ec_b-d13C_mat)/(d13C_sol+ec_b-d13C_mat))
δ_e	=(H2CO3*(d13C_mat-ec_b+eg_b+ea_g)+HCO3*(d13C_mat-ec_b))/(H2CO3+HCO3)
δ_i	=(H2CO3*(d13C_sol+ea_g)+0,5*HCO3*((d13C_sol+ea_g)+d13C_mat))/(H2CO3+HCO3)
B	=(d13C-de)/(di-de)
EICHINGER	=Ao_TAMERS*_B

me/l $=\text{HCO}_3 \cdot 1000$
 me/l $=(\text{H}_2\text{CO}_3 + \text{HCO}_3) \cdot 1000$
 p $=0,5 \cdot \text{HCO}_3 / (\text{HCO}_3 + \text{H}_2\text{CO}_3)$
 OLIVE $=0,5 \cdot \text{HCO}_3 / (\text{HCO}_3 + \text{H}_2\text{CO}_3) \cdot 90$

Tamers $=\text{SI}(8267 \cdot \text{LN}(\text{Ao_TAMERS}/\text{A14C}) < 0; \text{"actuel"}; 8267 \cdot \text{LN}(\text{Ao_TAMERS}/\text{A14C}))$
 Pearson $=\text{SI}(8267 \cdot \text{LN}(\text{Ao_PEARSON}/\text{A14C}) < 0; \text{"actuel"}; 8267 \cdot \text{LN}(\text{Ao_PEARSON}/\text{A14C}))$
 Mook $=\text{SI}(8267 \cdot \text{LN}(\text{Ao_MOOK}/\text{A14C}) < 0; \text{"actuel"}; 8267 \cdot \text{LN}(\text{Ao_MOOK}/\text{A14C}))$
 F & G $=\text{SI}(8267 \cdot \text{LN}(\text{Ao_FG}/\text{A14C}) < 0; \text{"actuel"}; 8267 \cdot \text{LN}(\text{Ao_FG}/\text{A14C}))$
 F & G eq $=\text{SI}(8267 \cdot \text{LN}(\text{Ao_FG_eq}/\text{A14C}) < 0; \text{"actuel"}; 8267 \cdot \text{LN}(\text{Ao_FG_eq}/\text{A14C}))$
 AIEA $=\text{SI}(8267 \cdot \text{LN}(\text{Ao_AIEA}/\text{A14C}) < 0; \text{"actuel"}; 8267 \cdot \text{LN}(\text{Ao_AIEA}/\text{A14C}))$
 Evans $=\text{SI}(8267 \cdot \text{LN}(\text{Ao_EVANS}/\text{A14C}) < 0; \text{"actuel"}; 8267 \cdot \text{LN}(\text{Ao_EVANS}/\text{A14C}))$
 Eichinger $=\text{SI}(8267 \cdot \text{LN}(\text{Ao_EICHINGER}/\text{A14C}) < 0; \text{"actuel"}; 8267 \cdot \text{LN}(\text{Ao_EICHINGER}/\text{A14C}))$
 Olive $=\text{SI}(8267 \cdot \text{LN}(\text{Ao_OLIVE}/\text{A14C}) < 0; \text{"actuel"}; 8267 \cdot \text{LN}(\text{Ao_OLIVE}/\text{A14C}))$
 brut $=\text{SI}(8267 \cdot \text{LN}(100/\text{A14C}) < 0; \text{"actuel"}; 8267 \cdot \text{LN}(100/\text{A14C}))$

egc $= -9037/T + 22,73$
 d13Ceq $= \text{d13C} + (((\text{H}_2\text{CO}_3/\text{CMTD}) \cdot (-\text{ea_g})) + ((\text{HCO}_3/\text{CMTD}) \cdot \text{eg_b}) + ((\text{\#REF !94/CMTD}) \cdot \text{_e_g_c}))$