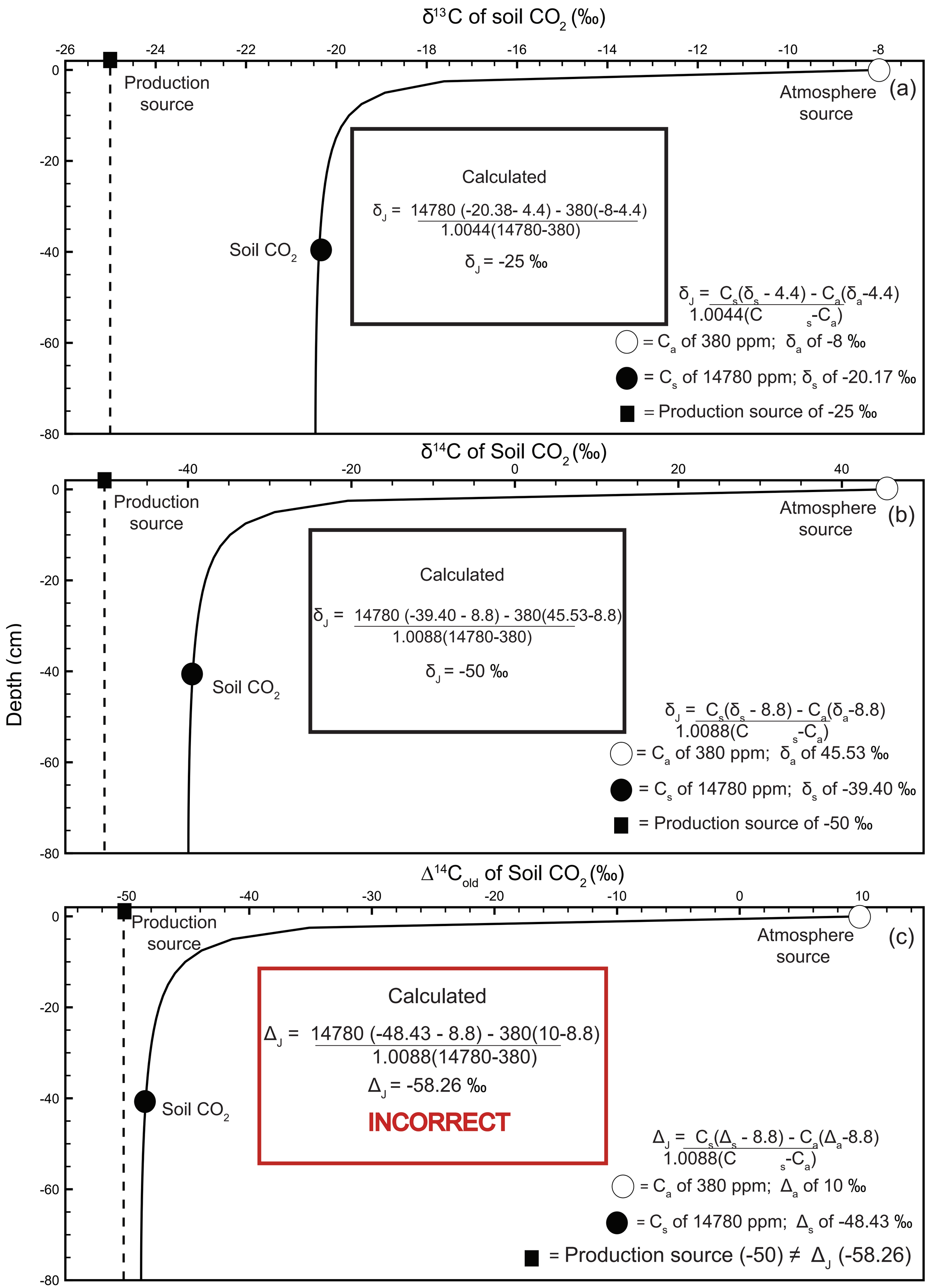
δ13C of soil CO2 (‰)
-26
-24
-22
-20
-18
-16
-14
-12
-10
-8
0
-20
-40
-60
-80
Production source
Atmosphere source
(a)
Soil CO2
Calculated
δJ = 14780 (-20.38- 4.4) - 380(-8-4.4) / 1.0044(14780-380)
δJ = -25 ‰
δJ = Cs(δs - 4.4) - Ca(δa-4.4) / 1.0044(Cs-Ca)
= Ca of 380 ppm; δa of -8 ‰
= Cs of 14780 ppm; δs of -20.17 ‰
= Production source of -25 ‰
δ14C of Soil CO2 (‰)
-40
-20
0
20
40
0
-20
-40
-60
-80
Depth (cm)
Production source
Atmosphere source
(b)
Soil CO2
Calculated
δJ = 14780 (-39.40 - 8.8) - 380(45.53-8.8) / 1.0088(14780-380)
δJ = -50 ‰
δJ = Cs(δs - 8.8) - Ca(δa-8.8) / 1.0088(Cs-Ca)
= Ca of 380 ppm; δa of 45.53 ‰
= Cs of 14780 ppm; δs of -39.40 ‰
= Production source of -50 ‰
Δ14Cold of Soil CO2 (‰)
-50
-40
-30
-20
-10
0
10
0
-20
-40
-60
-80
Production source
Atmosphere source
(c)
Soil CO2
Calculated
ΔJ = 14780 (-48.43 - 8.8) - 380(10-8.8) / 1.0088(14780-380)
ΔJ = -58.26 ‰
INCORRECT
ΔJ = Cs(Δs - 8.8) - Ca(Δa-8.8) / 1.0088(Cs-Ca)
= Ca of 380 ppm; Δa of 10 ‰
= Cs of 14780 ppm; Δs of -48.43 ‰
= Production source (-50) ≠ ΔJ (-58.26)