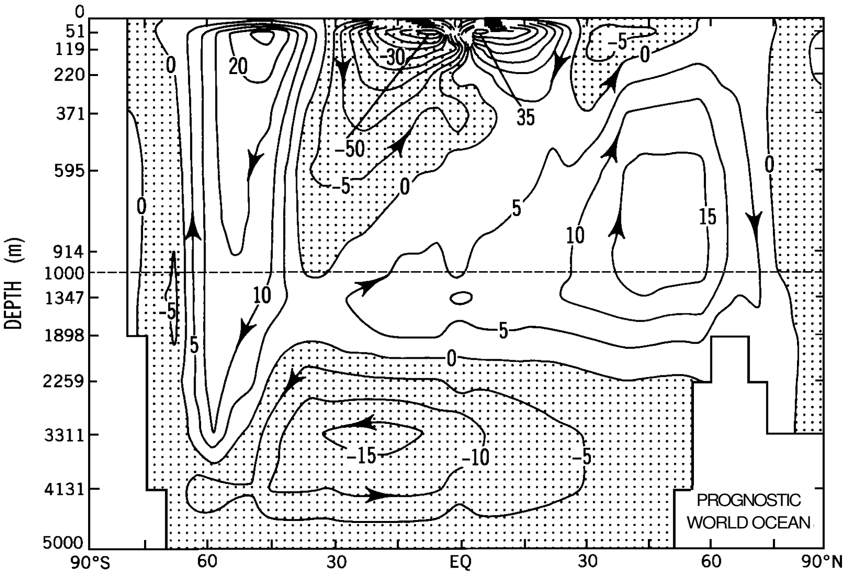


Figure 1:

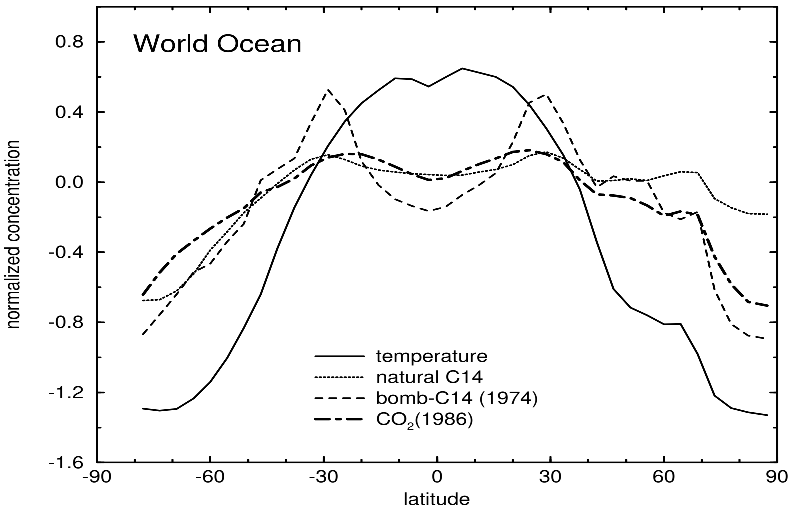
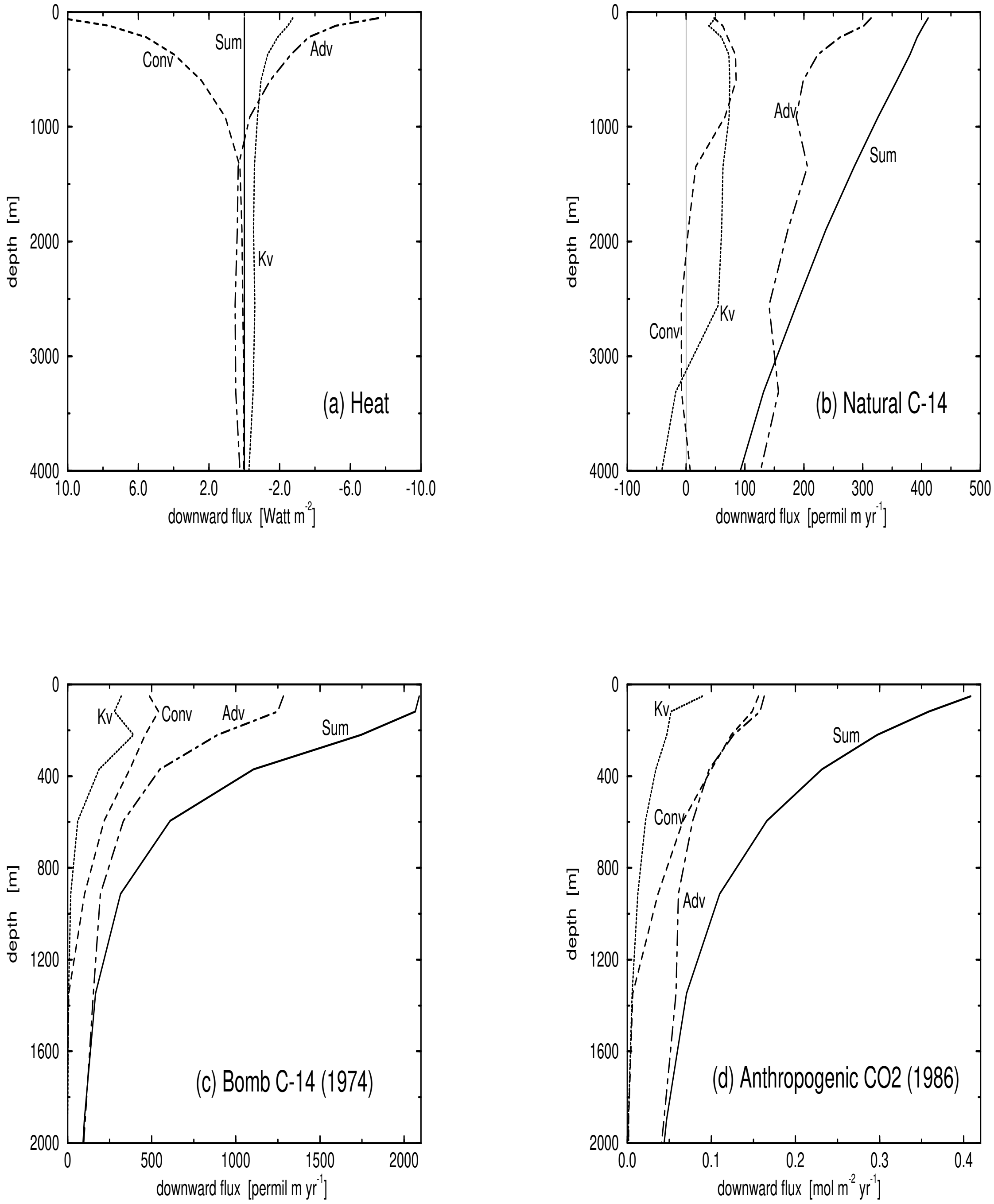


Figure 2:



(a) Heat
Sum
Adv
Conv
Kv
depth [m]
downward flux [Watt m^{-2}]
(b) Natural C-14
Adv
Sum
Kv
Conv
downward flux [permil m yr^{-1}]
(c) Bomb C-14 (1974)
Kv
Conv
Adv
Sum
downward flux [permil m yr^{-1}]
(d) Anthropogenic CO2 (1986)
Kv
Sum
Conv
Adv
downward flux [mol m^{-2} yr^{-1}]

Figure 3:

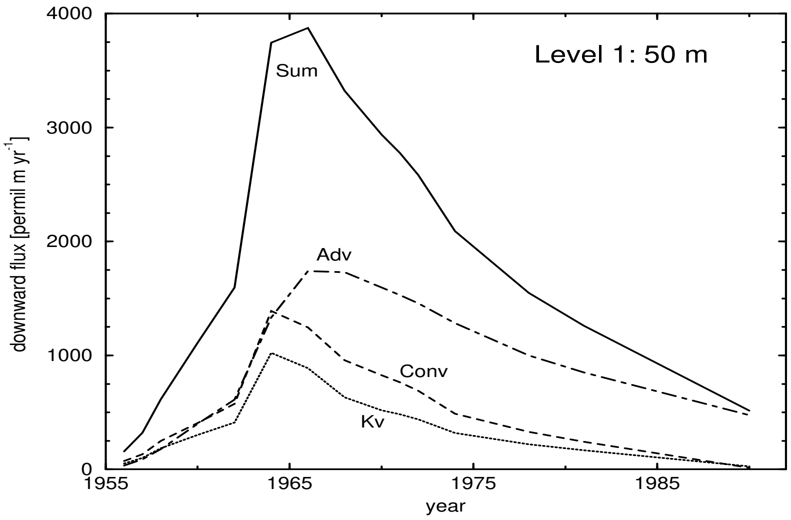


Figure 4a:

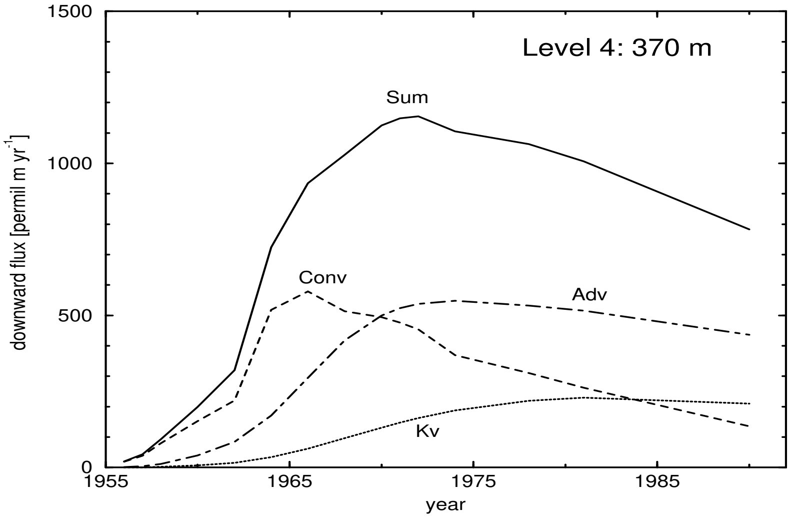


Figure 4b:

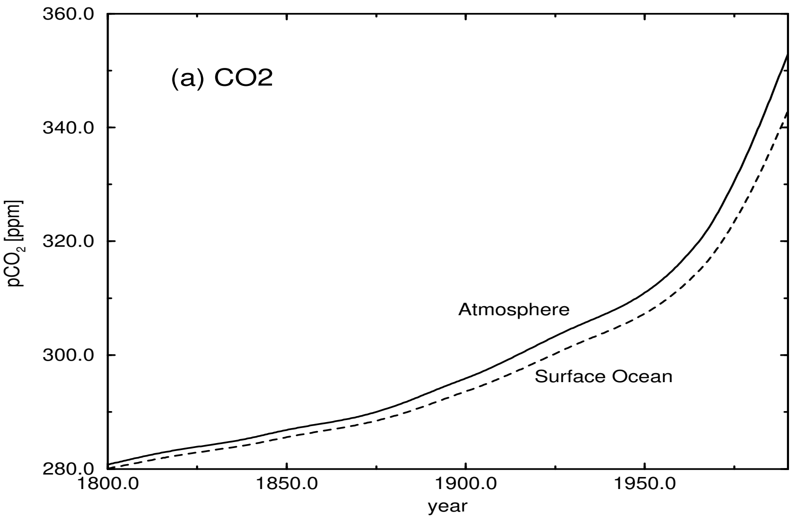


Figure 5a:

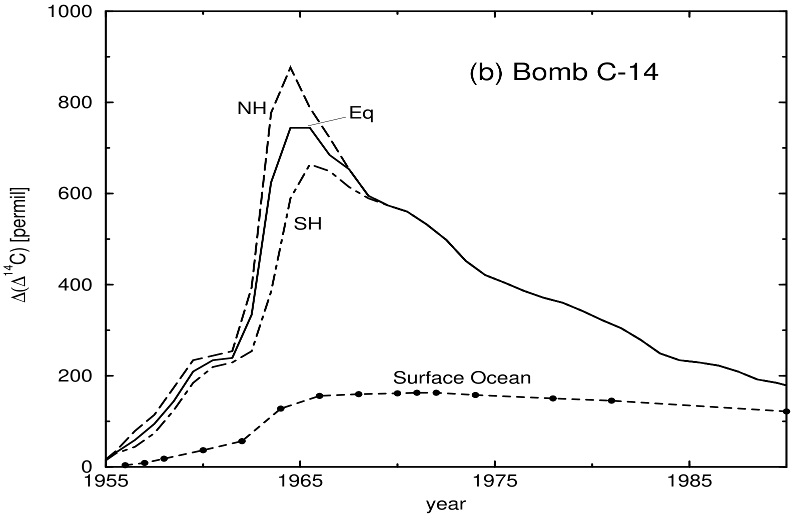


Figure 5b:

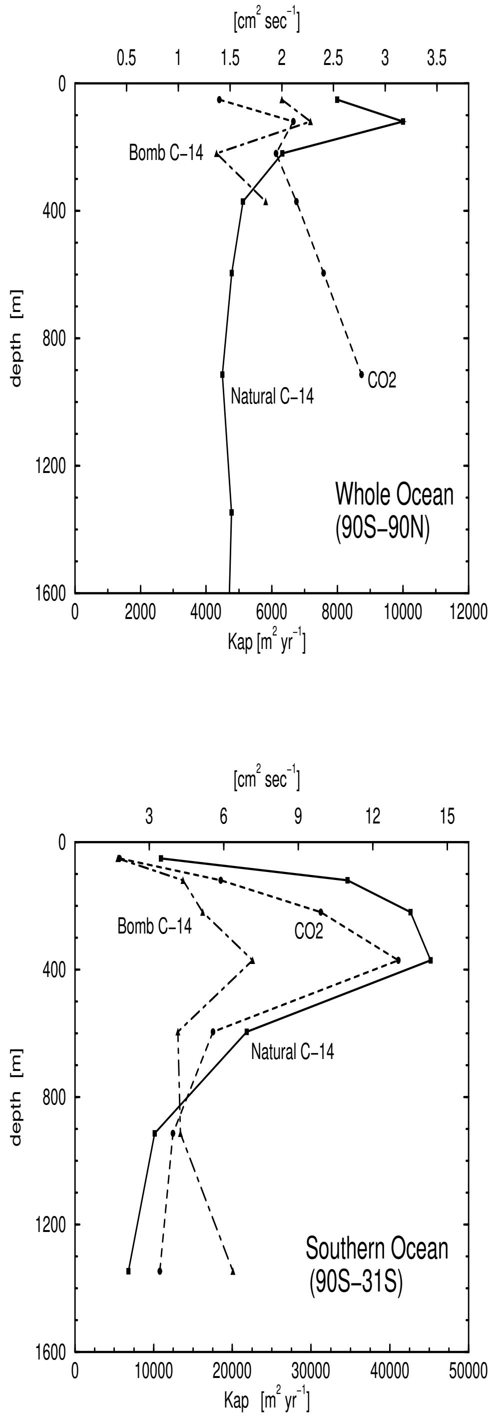

[cm^2 sec^{-1}]
Kap [m^2 yr^{-1}]
depth [m]
Bomb C-14
CO2
Natural C-14
T
Whole Ocean
(90S-90N)
Mid and Low Latitudes
(31S-27N)
Southern Ocean
(90S-31S)

Figure 6:

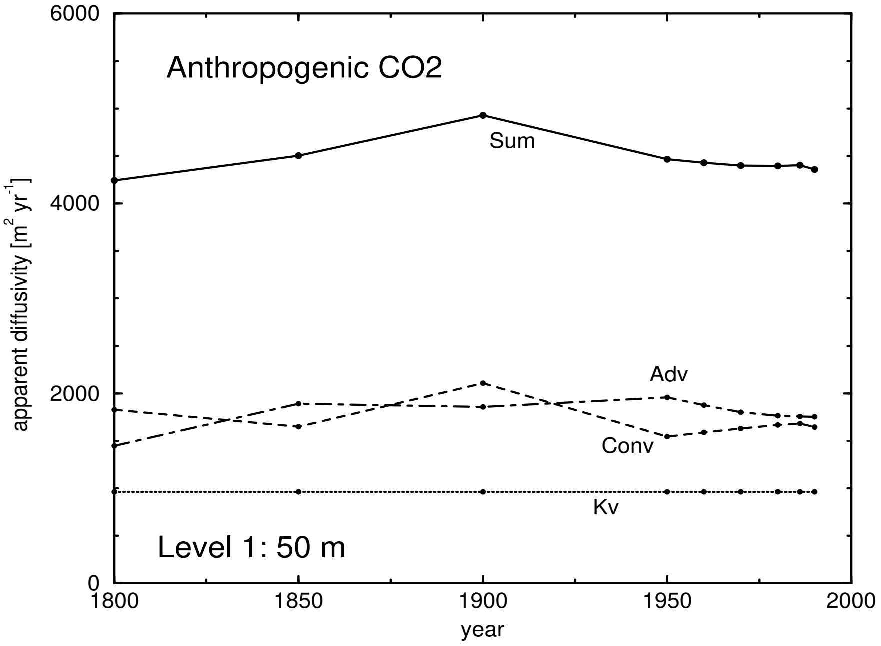

Anthropogenic CO2
Sum
Adv
Conv
Kv
Level 1: 50 m
apparent diffusivity [m^2 yr^{-1}]
year
6000
4000
2000
0
1800
1850
1900
1950
2000

Figure 7:

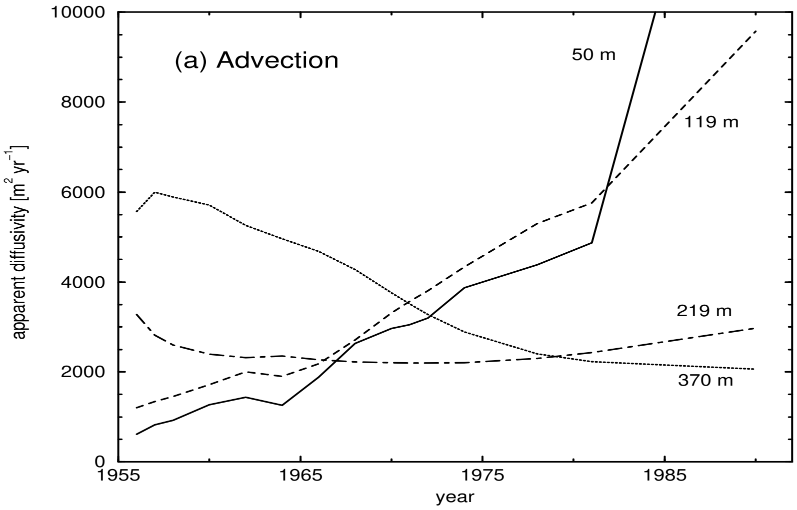


Figure 8a:

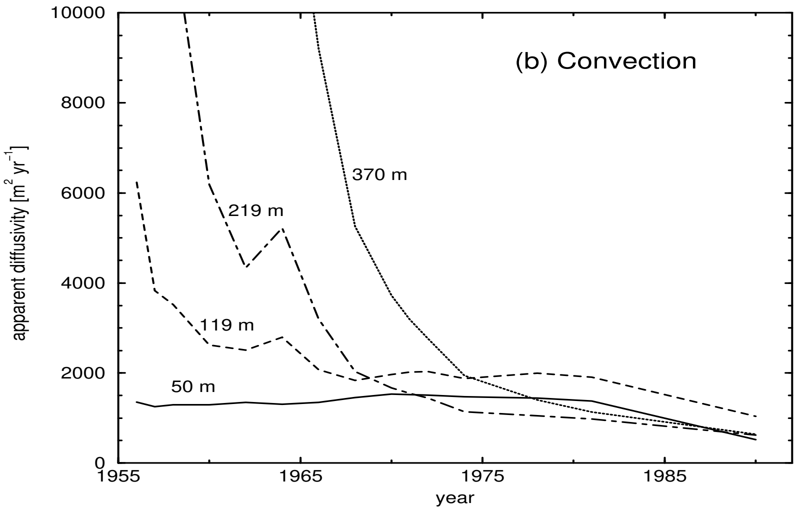
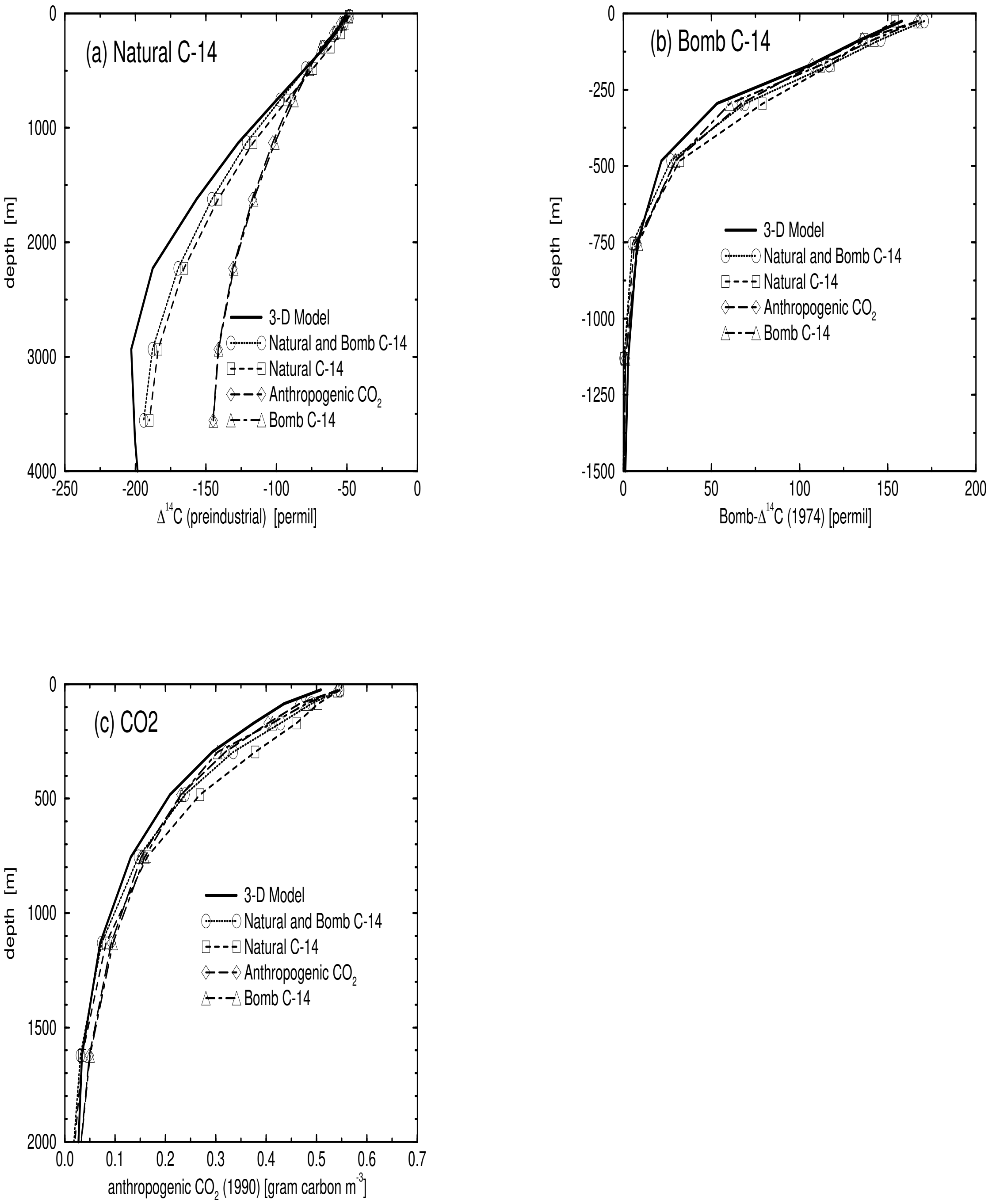


Figure 8b:



(a) Natural C-14
depth [m]
Δ14C (preindustrial) [permil]
0
1000
2000
3000
4000
-250
-200
-150
-100
-50
0
3-D Model
Natural and Bomb C-14
Natural C-14
Anthropogenic CO2
Bomb C-14
(b) Bomb C-14
depth [m]
Bomb-Δ14C (1974) [permil]
0
-250
-500
-750
-1000
-1250
-1500
0
50
100
150
200
3-D Model
Natural and Bomb C-14
Natural C-14
Anthropogenic CO2
Bomb C-14
(c) CO2
depth [m]
anthropogenic CO2 (1990) [gram carbon m-3]
0
500
1000
1500
2000
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
3-D Model
Natural and Bomb C-14
Natural C-14
Anthropogenic CO2
Bomb C-14

Figure 9:

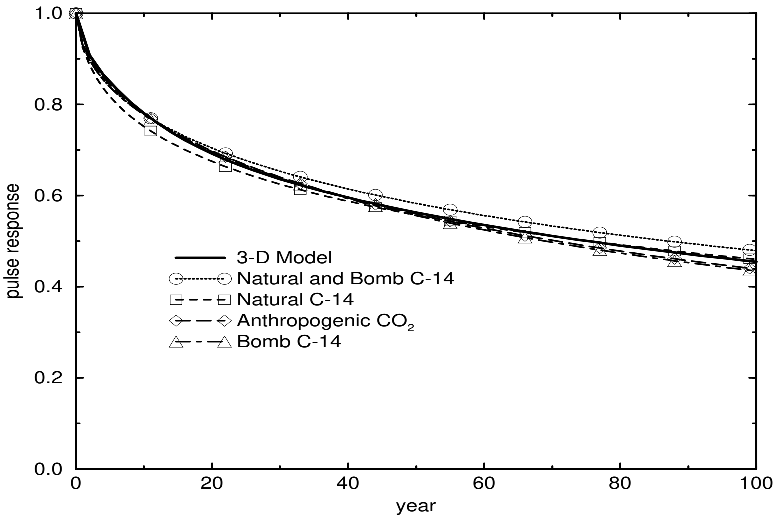


Figure 10a:

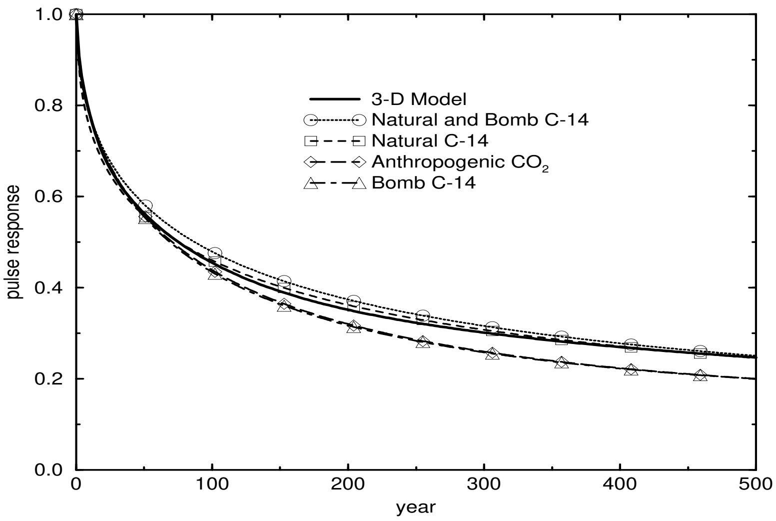


Figure 10b: