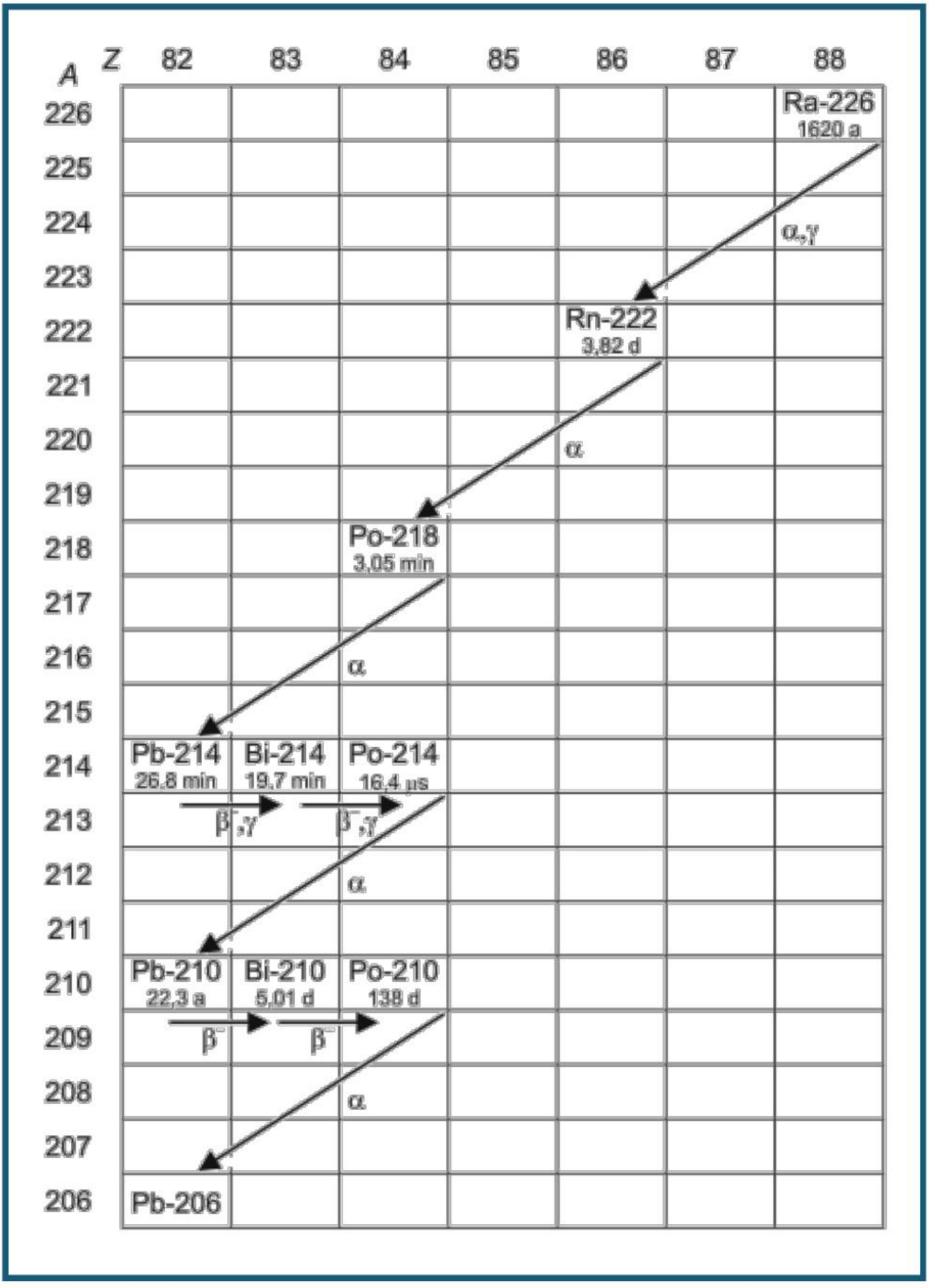
The radioactive series of radium-226



88-Ra-226

Radium-226

Half-life: 1600 years

Mode of decay: alpha into Rn-222

Decay energy: 4.871 MeV

Subsequently γ radiation of Rn-222 at 186 keV possible

86-Rn-222

Radon-222, noble gas

Half-life: 3.8235 days

Mode of decay: alpha into Po-218

Decay energy: 5.590 MeV

84-Po-218

Polonium-218

(Historically Po-218 is also called radium A)

Half-life: 3.10 minutes

Mode of decay: alpha into Pb-214

Probability: 99.98 %

Decay energy: 6.115 MeV

Mode of decay: beta into At-218

Probability: 0.02 %

Decay energy: 0.265 MeV

85-At-218

Astatine-218

Half-life: 1.5 seconds

Mode of decay: alpha into Bi-214

Probability: 99.90 %

Decay energy: 6.874 MeV

Mode of decay: beta into Rn-218

Probability: 0.1 %

Decay energy: 2.883 MeV

86-Rn-218

Radon-218

Half-life: 35 milliseconds

Mode of decay: alpha into Po-214

Decay energy: 7.263 MeV

82-Pb-214

Lead-214

(Historically Pb-214 is also called radium B)

Half-life: 26.8 minutes

Mode of decay: beta into Bi-214

Decay energy: 1.024 MeV

Subsequently γ radiation of Bi-214 at 352 keV, 295 keV, 242 keV, 53 keV possible

83-Bi-214

Bismuth-214

(Historically Bi-214 is also called radium C)

Half-life: 19.9 minutes

Mode of decay: beta into Po-214

Probability: 99.98 %

Decay energy: 3.272 MeV

Subsequently γ radiation of Po-214 at 609 keV possible

Mode of decay: alpha into Tl-210

Probability: 0.02 %

Decay energy: 5.617 MeV

84-Po-214

Polonium-214

(Historically Po-214 is also called radium C')

Half-life: 164.3 µs

Mode of decay: alpha into Pb-210

Decay energy: 7.833 MeV

81-Tl-210

Thallium-210

(Historically Tl-210 is also called radium C")

Half-life: 1.3 Minutes

Mode of decay: beta into Pb-210

Decay energy: 5.484 MeV

82-Pb-210

Lead-210

(Historically Pb-210 is also called radium D)

Half-life: 22.3 years

Mode of decay: beta into Bi-210

Decay energy: 0.064 MeV

Mode of decay: alpha into Hg-206

Probability: 1.9^{-6} %

Decay energy: 3.792 MeV

83-Bi-210

Bismuth-210

(Historically Bi-210 is also called radium E)

Half-life: 5.013 days

Mode of decay: beta into Po-210

Decay energy: 1.163 MeV

Mode of decay: alpha into Tl-206

Probability: 0.00013 %

Decay energy: 5.037 MeV

84-Po-210

Polonium-210

(Historically Po-210 is also called radium F)

Half-life: 138.376 days

Mode of decay: alpha into Pb-206

Decay energy: 5.407 MeV

82-Pb-206

Lead-206

(Historically Pb-206 is also called Radium G)

Pb-206 is the final product of the U-238 radioactive series. It is stable.

The entries are taken from the NUDAT database, see:

R.R.Kinsey, et al., *The NUDAT/PCNUDAT Program for Nuclear Data*, paper submitted to the 9 th International Symposium of Capture-Gamma_ray Spectroscopy and Related Topics, Budapest, Hungary, Octover 1996. Data extracted from NUDAT database (Dec.18, 1997).