

## TAVOLA PERIODICA DEI NUCLEI ATOMICI

### configurazione dei livelli nucleari degli isotopi **PROTOATTINIO Z = 91-a**

$\frac{E_c(\text{MeV})}{E_s(\text{MeV})}$	Sa	$\frac{m_c}{m_s}$	n	1	2	3	4	5	6	7	$\frac{E_p(\text{eV})}{p-T_{1/2}}$
$\frac{1618.18}{1618.3}$	$\text{Pa}_{91}^{212}$	$\frac{212.02335}{212.02320}$	91n	2+0	8+0	18+0	32+0	0+20	1+9	0+1	$\frac{7.958M}{\alpha 31.7ms}$
$\frac{1628.37}{1628.3}$	$\text{Pa}_{91}^{213}$	$\frac{213.02107}{213.02111}$	91n	2+0	8+0	18+0	32+0	0+21	0+9	0+1	$\frac{8.390M}{\alpha 5.30ms}$
$\frac{1636.68}{1636.6}$	$\text{Pa}_{91}^{214}$	$\frac{214.02082}{214.02092}$	91n	2+0	8+0	18+0	30+1	1+21	0+9	0+1	$\frac{8.270M}{\alpha 17.0ms}$
$\frac{1646.12}{1646.3}$	$\text{Pa}_{91}^{215}$	$\frac{215.01934}{215.01919}$	91n	2+0	8+0	18+0	28+2	0+22	1+9	1+0	$\frac{8.240M}{\alpha 14.0ms}$
$\frac{1654.44}{1654.4}$	$\text{Pa}_{91}^{216}$	$\frac{216.01908}{216.01911}$	91n	2+0	8+0	18+0	26+3	1+22	1+9	1+0	$\frac{8.097M}{\alpha 150ms}$
$\frac{1662.76}{1663.2}$	$\text{Pa}_{91}^{217}$	$\frac{217.01881}{217.01832}$	91n	2+0	8+0	18+0	26+3	0+23	1+9	1+0	$\frac{8.491M}{\alpha 3.60ms}$
$\frac{1669.97}{1669.7}$	$\text{Pa}_{91}^{218}$	$\frac{218.01974}{218.020042}$	91n	2+0	8+0	18+0	26+3	1+23	0+9	0+1	$\frac{9.815M}{\alpha 113\mu s}$
$\frac{1678.29}{1677.9}$	$\text{Pa}_{91}^{219}$	$\frac{219.01947}{219.01988}$	91n	2+0	8+0	18+0	26+3	0+24	0+9	0+1	$\frac{10.080M}{\alpha 53.0ns}$
$\frac{1684.74}{1684.1}$	$\text{Pa}_{91}^{220}$	$\frac{220.02121}{220.02188}$	91n	2+0	8+0	18+0	24+4	0+24	1+9	0+1	$\frac{9.830M}{\alpha 0.78\mu s}$
$\frac{1693.06}{1692.2}$	$\text{Pa}_{91}^{221}$	$\frac{221.02094}{221.02188}$	91n	2+0	8+0	18+0	22+5	1+24	1+9	0+1	$\frac{8.850M}{\alpha 2.90ms}$
$\frac{1699.52}{1698.5}$	$\text{Pa}_{91}^{222}$	$\frac{222.02267}{222.02374}$	91n	2+0	8+0	18+0	22+5	1+24	0+10	0+1	$\frac{8.626M}{\alpha 1.68ms}$
$\frac{1707.10}{1706.4}$	$\text{Pa}_{91}^{223}$	$\frac{223.02320}{223.02396}$	91n	2+0	8+0	18+0	20+6	1+24	0+11	1+0	$\frac{8.330M}{\alpha 5.10ms}$
$\frac{1713.55}{1712.9}$	$\text{Pa}_{91}^{224}$	$\frac{224.02494}{224.025626}$	91n	2+0	8+0	18+0	18+7	1+24	1+11	1+0	$\frac{7.694M}{\alpha 0.85s}$
$\frac{1720.01}{1720.5}$	$\text{Pa}_{91}^{225}$	$\frac{225.02667}{225.02613}$	91n	2+0	8+0	18+0	18+7	1+24	0+12	1+0	$\frac{7.390M}{\alpha 1.70s}$
$\frac{1727.21}{1726.9}$	$\text{Pa}_{91}^{226}$	$\frac{226.02761}{226.027948}$	91n	2+0	8+0	18+0	18+7	0+25	1+11	0+1	$\frac{6.987M}{\alpha 1.80m}$
$\frac{1733.67}{1734.2}$	$\text{Pa}_{91}^{227}$	$\frac{227.02933}{227.028805}$	91n	2+0	8+0	18+0	18+7	0+25	0+12	0+1	$\frac{6.5804M}{\alpha 38.3m}$
$\frac{1740.50}{1740.1}$	$\text{Pa}_{91}^{228}$	$\frac{228.03067}{228.031051}$	91n	2+0	8+0	18+0	16+8	1+24	0+14	0+0	$\frac{2.155M}{ce 22.4h}$

$\frac{E_c(\text{MeV})}{E_s(\text{MeV})}$	Sa	$\frac{m_c}{m_s}$	n	1	2	3	4	5	6	7	$\frac{E_p(\text{eV})}{p^{-1}T_{1/2}}$
$\frac{1746.96}{1747.2}$	$\text{Pa}_{91}^{229}$	$\frac{229.032398}{229.032097}$	91n	2+0	8+0	18+0	14+9	1+24	1+14	0+0	$\frac{311.0K}{ce\ 1.50d}$
$\frac{1753.42}{1753.0}$	$\text{Pa}_{91}^{230}$	$\frac{230.03413}{230.034541}$	91n	2+0	8+0	18+0	14+9	1+24	0+15	0+0	$\frac{1.311M}{ce\ 17.4d}$
$\frac{1759.87}{1759.9}$	$\text{Pa}_{91}^{231}$	$\frac{231.03587}{231.035884}$	91n	2+0	8+0	18+0	12+10	1+24	1+15	0+0	$\frac{5.1499M}{\alpha\ 3.276\cdot 10^4a}$
$\frac{1764.46}{1765.4}$	$\text{Pa}_{91}^{232}$	$\frac{232.03960}{232.038592}$	91n	2+0	8+0	18+0	12+10	0+24	1+16	0+0	$\frac{1.337M}{\beta^- 1.32d}$
$\frac{1772.78}{1771.9}$	$\text{Pa}_{91}^{233}$	$\frac{233.03934}{233.040247}$	91n	2+0	8+0	18+0	10+11	1+24	1+16	0+0	$\frac{570.3M}{\beta^- 26.975d}$
$\frac{1777.38}{1777.2}$	$\text{Pa}_{91}^{234}$	$\frac{234.04307}{234.043308}$	91n	2+0	8+0	18+0	10+11	0+24	1+17	0+0	$\frac{2.194M}{\beta^- 6.70h}$
$\frac{1783.84}{1783.2}$	$\text{Pa}_{91}^{235}$	$\frac{235.04479}{235.04544}$	91n	2+0	8+0	18+0	10+11	0+24	0+18	0+0	$\frac{1.410M}{\beta^- 24.44m}$
$\frac{1788.43}{1788.3}$	$\text{Pa}_{91}^{236}$	$\frac{236.04853}{236.04868}$	91n	2+0	8+0	18+0	8+12	1+23	0+19	0+0	$\frac{2.900M}{\beta^- 9.10m}$
$\frac{1794.50}{1794.1}$	$\text{Pa}_{91}^{237}$	$\frac{237.05068}{237.05115}$	91n	2+0	8+0	18+0	8+12	0+24	0+18	0+1	$\frac{2.250M}{\beta^- 8.70m}$
$\frac{1799.09}{1799.0}$	$\text{Pa}_{91}^{238}$	$\frac{238.05442}{238.05450}$	91n	2+0	8+0	18+0	6+13	1+23	0+19	0+1	$\frac{3.460M}{\beta^- 2.27m}$
$\frac{1804.80}{1804.5}$	$\text{Pa}_{91}^{239}$	$\frac{239.05695}{239.05726}$	91n	2+0	8+0	18+0	4+14	0+23	1+20	1+0	$\frac{2.760M}{\beta^- 1.80h}$
$\frac{1809.39}{1809.1}$	$\text{Pa}_{91}^{240}$	$\frac{240.06069}{240.06098}$	91n	2+0	8+0	18+0	2+15	1+22	1+21	1+0	$\frac{4.100M}{\beta^- 2m}$
$\frac{1813.99}{-}$	$\text{Pa}_{91}^{241}$	$\frac{241.06442}{-}$	91n	2+0	8+0	18+0	2+15	0+22	1+22	1+0	$\frac{3.900M}{\beta^-}$
$\frac{1818.58}{-}$	$\text{Pa}_{91}^{242}$	$\frac{242.06815}{-}$	91n	2+0	8+0	18+0	0+16	1+21	1+23	1+0	$\frac{4.902M}{\beta^-}$
$\frac{1821.31}{-}$	$\text{Pa}_{91}^{243}$	$\frac{243.07389}{-}$	91n	2+0	8+0	18+0	0+16	1+20	0+25	1+0	$\frac{6.172M}{\beta^-}$
$\frac{1825.90}{-}$	$\text{Pa}_{91}^{244}$	$\frac{244.07766}{-}$	91n	2+0	8+0	18+0	0+16	0+20	0+26	1+0	$\frac{8.060M}{\beta^-}$
$\frac{1829.36}{-}$	$\text{Pa}_{91}^{245}$	$\frac{245.08257}{-}$	91n	2+0	8+0	16+1	0+16	1+19	1+26	0+1	$\frac{8.072M}{\beta^-}$