

## TAVOLA PERIODICA DEI NUCLEI ATOMICI

**configurazione dei livelli nucleari degli isotopi ;ASTATO Z = 85-a**

| $\frac{E_c(\text{MeV})}{E_s(\text{MeV})}$ | Sa                              | $\frac{m_c}{m_s}$               | n   | 1   | 2   | 3    | 4    | 5    | 6   | 7   | $\frac{E_p(\text{eV})}{P-T_{1/2}}$ |
|---|---------------------------------|---------------------------------|-----|-----|-----|------|------|------|-----|-----|------------------------------------|
| $\frac{1481.63}{-}$                       | At <sub>85</sub> <sup>192</sup> | $\frac{192.00168}{-}$           | 85n | 2+0 | 8+0 | 18+0 | 32+0 | 1+13 | 1+9 | 1+0 | $\frac{7.700M}{\alpha 22.0ms}$     |
| $\frac{1491.62}{1491.4}$                  | At <sub>85</sub> <sup>193</sup> | $\frac{192.99962}{192.99984}$   | 85n | 2+0 | 8+0 | 18+0 | 32+0 | 1+14 | 0+9 | 1+0 | $\frac{7.573M}{\alpha 28ms}$       |
| $\frac{1500.52}{1500.5}$                  | At <sub>85</sub> <sup>194</sup> | $\frac{193.99873}{193.99873}$   | 85n | 2+0 | 8+0 | 18+0 | 32+0 | 1+15 | 0+8 | 0+1 | $\frac{7.463M}{\alpha 310ms}$      |
| $\frac{1510.50}{1510.9}$                  | At <sub>85</sub> <sup>195</sup> | $\frac{194.99668}{194.996268}$  | 85n | 2+0 | 8+0 | 18+0 | 30+1 | 1+16 | 1+7 | 0+1 | $\frac{7.339M}{\alpha 328ms}$      |
| $\frac{1519.77}{1519.4}$                  | At <sub>85</sub> <sup>196</sup> | $\frac{195.99539}{195.99579}$   | 85n | 2+0 | 8+0 | 18+0 | 30+1 | 0+17 | 0+8 | 1+0 | $\frac{7.200M}{\alpha 388ms}$      |
| $\frac{1529.76}{1529.9}$                  | At <sub>85</sub> <sup>197</sup> | $\frac{196.99333}{196.99319}$   | 85n | 2+0 | 8+0 | 18+0 | 28+2 | 0+18 | 1+7 | 1+0 | $\frac{7.100M}{\alpha 388ms}$      |
| $\frac{1538.65}{1538.3}$                  | At <sub>85</sub> <sup>198</sup> | $\frac{197.99246}{197.99284}$   | 85n | 2+0 | 8+0 | 18+0 | 28+2 | 0+19 | 1+6 | 0+1 | $\frac{6.8924M}{\alpha 3.80s}$     |
| $\frac{1548.64}{1548.5}$                  | At <sub>85</sub> <sup>199</sup> | $\frac{198.99040}{198.99053}$   | 85n | 2+0 | 8+0 | 18+0 | 28+2 | 0+20 | 0+6 | 0+1 | $\frac{6.7785M}{\alpha 7.03s}$     |
| $\frac{1556.81}{1556.8}$                  | At <sub>85</sub> <sup>200</sup> | $\frac{199.990351}{199.990351}$ | 85n | 2+0 | 8+0 | 18+0 | 26+3 | 1+20 | 0+6 | 0+1 | $\frac{6.5961M}{\alpha 43.0s}$     |
| $\frac{1566.07}{1566.6}$                  | At <sub>85</sub> <sup>201</sup> | $\frac{200.98901}{200.988417}$  | 85n | 2+0 | 8+0 | 18+0 | 24+4 | 0+21 | 1+6 | 1+0 | $\frac{6.4728M}{\alpha 85.2s}$     |
| $\frac{1574.24}{1574.5}$                  | At <sub>85</sub> <sup>202</sup> | $\frac{201.98891}{201.98863}$   | 85n | 2+0 | 8+0 | 18+0 | 22+5 | 1+21 | 1+6 | 1+0 | $\frac{7.330M}{ce 184s}$           |
| $\frac{1584.23}{1584.1}$                  | At <sub>85</sub> <sup>203</sup> | $\frac{202.98685}{202.986942}$  | 85n | 2+0 | 8+0 | 18+0 | 22+5 | 1+22 | 0+6 | 1+0 | $\frac{5.147M}{ce 7.40m}$          |
| $\frac{1592.40}{1591.9}$                  | At <sub>85</sub> <sup>204</sup> | $\frac{203.98674}{203.987251}$  | 85n | 2+0 | 8+0 | 18+0 | 22+5 | 0+23 | 0+6 | 1+0 | $\frac{6.470M}{ce 9.12m}$          |
| $\frac{1600.57}{1601.1}$                  | At <sub>85</sub> <sup>205</sup> | $\frac{204.98664}{204.986074}$  | 85n | 2+0 | 8+0 | 18+0 | 20+6 | 1+23 | 0+6 | 1+0 | $\frac{4.537M}{ce 26.9m}$          |
| $\frac{1608.74}{1608.6}$                  | At <sub>85</sub> <sup>206</sup> | $\frac{205.98653}{205.986667}$  | 85n | 2+0 | 8+0 | 18+0 | 20+6 | 0+24 | 0+6 | 1+0 | $\frac{5.756M}{ce 30.6m}$          |
| $\frac{1617.63}{1617.5}$                  | At <sub>85</sub> <sup>207</sup> | $\frac{206.98565}{206.985784}$  | 85n | 2+0 | 8+0 | 18+0 | 20+6 | 0+25 | 0+5 | 0+1 | $\frac{3.919M}{ce 1.81h}$          |
| $\frac{1625.09}{1624.8}$                  | At <sub>85</sub> <sup>208</sup> | $\frac{207.98631}{207.986590}$  | 85n | 2+0 | 8+0 | 18+0 | 18+7 | 0+25 | 0+6 | 1+0 | $\frac{5.001M}{ce 1.63h}$          |

| $\frac{E_c(\text{MeV})}{E_s(\text{MeV})}$ | Sa                              | $\frac{m_c}{m_s}$               | n   | 1   | 2   | 3    | 4     | 5    | 6    | 7   | $\frac{E_p(\text{eV})}{p-T_{1/2}}$ |
|---|---------------------------------|---------------------------------|-----|-----|-----|------|-------|------|------|-----|------------------------------------|
| $\frac{1624.36}{1624.8}$                  | At <sub>85</sub> <sup>208</sup> | $\frac{207.98709}{207.986590}$  | 85n | 2+0 | 8+0 | 18+0 | 18+7  | 0+25 | 0+6  | 1+0 | $\frac{5.001M}{ce 1.63h}$          |
| $\frac{1632.53}{1633.3}$                  | At <sub>85</sub> <sup>209</sup> | $\frac{208.98698}{208.986173}$  | 85n | 2+0 | 8+0 | 18+0 | 18+7  | 0+25 | 0+7  | 0+0 | $\frac{3.484M}{ce 5.41h}$          |
| $\frac{1638.88}{1640.4}$                  | At <sub>85</sub> <sup>210</sup> | $\frac{209.98883}{209.987148}$  | 85n | 2+0 | 8+0 | 18+0 | 16+8  | 0+25 | 1+7  | 0+0 | $\frac{3.981M}{ce 8.10h}$          |
| $\frac{1645.23}{1648.2}$                  | At <sub>85</sub> <sup>211</sup> | $\frac{210.99068}{210.987496}$  | 85n | 2+0 | 8+0 | 18+0 | 16+8  | 0+25 | 0+8  | 0+0 | $\frac{785.0K}{ce 7.214h}$         |
| $\frac{1651.58}{1653.2}$                  | At <sub>85</sub> <sup>212</sup> | $\frac{211.99253}{211.990745}$  | 85n | 2+0 | 8+0 | 18+0 | 14+9  | 0+25 | 1+8  | 0+0 | $\frac{7.8170M}{\alpha 0.314s}$    |
| $\frac{1657.93}{1659.3}$                  | At <sub>85</sub> <sup>213</sup> | $\frac{212.99438}{212.992937}$  | 85n | 2+0 | 8+0 | 18+0 | 14+9  | 0+25 | 0+9  | 0+0 | $\frac{9.254M}{\alpha 125ns}$      |
| $\frac{1664.28}{1664.1}$                  | At <sub>85</sub> <sup>214</sup> | $\frac{213.99622}{213.996372}$  | 85n | 2+0 | 8+0 | 18+0 | 12+10 | 0+25 | 1+9  | 0+0 | $\frac{8.987M}{\alpha 558ns}$      |
| $\frac{1669.54}{1670.1}$                  | At <sub>85</sub> <sup>215</sup> | $\frac{214.99924}{214.998653}$  | 85n | 2+0 | 8+0 | 18+0 | 10+11 | 0+25 | 1+9  | 1+0 | $\frac{8.178M}{\alpha 100\mu s}$   |
| $\frac{1674.79}{1674.6}$                  | At <sub>85</sub> <sup>216</sup> | $\frac{216.002271}{216.002423}$ | 85n | 2+0 | 8+0 | 18+0 | 10+11 | 0+25 | 1+9  | 0+1 | $\frac{7.950M}{\alpha 300\mu s}$   |
| $\frac{1680.42}{1680.6}$                  | At <sub>85</sub> <sup>217</sup> | $\frac{217.00489}{217.004719}$  | 85n | 2+0 | 8+0 | 18+0 | 8+12  | 1+24 | 0+11 | 1+0 | $\frac{7.2013M}{\alpha 32.3ms}$    |
| $\frac{1684.96}{1684.9}$                  | At <sub>85</sub> <sup>218</sup> | $\frac{218.00868}{218.008694}$  | 85n | 2+0 | 8+0 | 18+0 | 8+12  | 0+24 | 0+12 | 1+0 | $\frac{6.874M}{\alpha 1.50s}$      |
| $\frac{1691.31}{1690.7}$                  | At <sub>85</sub> <sup>219</sup> | $\frac{219.01053}{219.011162}$  | 85n | 2+0 | 8+0 | 18+0 | 6+13  | 0+24 | 1+12 | 1+0 | $\frac{6.324M}{\alpha 56.0s}$      |
| $\frac{1694.75}{1694.8}$                  | At <sub>85</sub> <sup>220</sup> | $\frac{220.01550}{220.01541}$   | 85n | 2+0 | 8+0 | 18+0 | 6+13  | 1+23 | 0+13 | 0+1 | $\frac{3.740M}{\alpha 3.71m}$      |
| $\frac{1700.37}{1700.4}$                  | At <sub>85</sub> <sup>221</sup> | $\frac{221.01813}{221.01805}$   | 85n | 2+0 | 8+0 | 18+0 | 4+14  | 0+23 | 1+14 | 1+0 | $\frac{2.340M}{\beta^- 2.30m}$     |
| $\frac{1704.91}{1704.5}$                  | At <sub>85</sub> <sup>222</sup> | $\frac{222.02193}{222.02233}$   | 85n | 2+0 | 8+0 | 18+0 | 2+15  | 1+22 | 1+15 | 1+0 | $\frac{4.300M}{\beta^- 54.0s}$     |
| $\frac{1710.16}{1709.9}$                  | At <sub>85</sub> <sup>223</sup> | $\frac{223.02495}{223.02519}$   | 85n | 2+0 | 8+0 | 18+0 | 2+15  | 1+22 | 1+15 | 0+1 | $\frac{3.00M}{\beta^- 50.0s}$      |

| $\frac{E_c(\text{MeV})}{E_s(\text{MeV})}$ | Sa                     | $\frac{m_c}{m_s}$     | n   | 1   | 2   | 3    | 4    | 5    | 6    | 7   | $\frac{E_p(\text{eV})}{p \cdot T_{1/2}}$ |
|---|------------------------|-----------------------|-----|-----|-----|------|------|------|------|-----|--|
| $\frac{1712.88}{-}$                       | $\text{At}_{85}^{224}$ | $\frac{224.03070}{-}$ | 85n | 2+0 | 8+0 | 18+0 | 2+15 | 1+21 | 0+17 | 0+1 | $\frac{5.270M}{\beta^- 76.0s}$           |
| $\frac{1719.23}{-}$                       | $\text{At}_{85}^{225}$ | $\frac{225.03255}{-}$ | 85n | 2+0 | 8+0 | 18+0 | 0+16 | 1+21 | 1+17 | 0+1 | $\frac{3.600M}{\beta^- >300ns}$          |
| $\frac{1723.03}{-}$                       | $\text{At}_{85}^{226}$ | $\frac{226.03713}{-}$ | 85n | 2+0 | 8+0 | 16+1 | 0+16 | 1+20 | 1+19 | 1+0 | $\frac{5.400M}{\beta^- >300ns}$          |
| $\frac{1727.57}{-}$                       | $\text{At}_{85}^{227}$ | $\frac{227.04092}{-}$ | 85n | 2+0 | 8+0 | 16+1 | 0+16 | 0+20 | 1+20 | 1+0 | $\frac{4.300M}{\beta^- >300ns}$          |

$E_c(\text{MeV})$  = valore calcolato dell'energia di legame

$E_s(\text{MeV})$  = valore sperimentale dell'energia di legame

$m_c$  = valore calcolato della massa atomica

$m_s$  = valore sperimentale della massa atomica

$n$  = numero di neutroni centrali attivi

1-7 = numero quantico associato al livello

$p + d$  = (numero di protoni) + (numero di deutoni) in orbita

$p \cdot T_{1/2}$  = particella emessa – periodo di dimezzamento

$E_p(\text{eV})$  = energia della particella emessa