

**TAVOLA PERIODICA DEI NUCLEI ATOMICI**  
**configurazione dei livelli nucleari degli isodiaferi I = +11**

$\frac{E_c(\text{MeV})}{E_s(\text{MeV})}$	Sa	$\frac{m_c}{m_s}$	n	1	2	3	4	5	6	7	$\frac{E_\alpha(\text{eV})}{T_{1/2}}$
$\frac{232.718}{232.86}$	Na <sub>11</sub> <sup>33</sup>	$\frac{33.02687}{33.02672}$	11n	0+1	0+4	0+1	0+1	0+3	0+1	0+0	$\frac{-18.40\text{M}}{\beta^- 8.0\text{ms}}$
$\frac{257.509}{256.96}$	Mg <sub>12</sub> <sup>35</sup>	$\frac{35.01675}{35.01734}$	12n	0+1	0+4	0+2	0+2	1+2	0+0	0+0	$\frac{-17.60\text{M}}{\beta^- 70.0\text{ms}}$
$\frac{278.713}{278.52}$	Al <sub>13</sub> <sup>37</sup>	$\frac{37.01047}{37.01068}$	13n	0+1	0+4	0+3	1+1	1+2	0+0	0+0	$\frac{-16.60\text{M}}{\beta^- 10.7\text{ms}}$
$\frac{301.694}{301.90}$	Si <sub>14</sub> <sup>39</sup>	$\frac{39.00229}{39.00207}$	14n	2+0	0+4	0+4	1+1	0+2	0+0	0+0	$\frac{-15.74\text{M}}{\beta^- 47.5\text{ms}}$
$\frac{324.025}{324.46}$	P <sub>15</sub> <sup>41</sup>	$\frac{40.99481}{40.99434}$	15n	2+0	0+4	0+5	2+0	0+2	0+0	0+0	$\frac{-17.21\text{M}}{\beta^- 100\text{ms}}$
$\frac{346.884}{346.52}$	S <sub>16</sub> <sup>43</sup>	$\frac{42.98676}{42.98715}$	16n	2+0	2+3	0+6	1+0	0+2	0+0	0+0	$\frac{-16.82\text{M}}{\beta^- 280\text{ms}}$
$\frac{368.432}{368.27}$	Cl <sub>17</sub> <sup>45</sup>	$\frac{44.98012}{44.98029}$	17n	2+0	2+3	0+6	1+2	1+0	0+0	0+0	$\frac{-15.80\text{M}}{\beta^- 413\text{ms}}$
$\frac{390.827}{391.17}$	Ar <sub>18</sub> <sup>47</sup>	$\frac{46.97256}{46.97219}$	18n	2+0	2+3	1+7	1+0	1+0	0+1	0+0	$\frac{-15.56\text{M}}{\beta^- 1.23\text{s}}$
$\frac{411.100}{410.95}$	K <sub>19</sub> <sup>49</sup>	$\frac{48.96729}{48.96745}$	19n	2+0	4+2	1+7	1+1	0+1	0+0	0+0	$\frac{-13.68\text{M}}{\beta^- 1.26\text{s}}$
$\frac{431.684}{431.85}$	Ca <sub>20</sub> <sup>51</sup>	$\frac{50.96168}{50.9615}$	20n	2+0	4+2	1+8	1+0	1+0	0+1	0+0	$\frac{-13.09\text{M}}{\beta^- 10.0\text{s}}$
$\frac{449.065}{448.97}$	Sc <sub>21</sub> <sup>53</sup>	$\frac{52.95951}{52.95961}$	21n	2+0	6+1	0+9	0+0	0+0	2+1	0+0	$\frac{-10.40\text{M}}{\beta^- 2.40\text{s}}$
$\frac{468.313}{468.38}$	Ti <sub>22</sub> <sup>55</sup>	$\frac{54.95534}{54.95527}$	22n	2+0	8+0	1+8	0+1	0+2	1+0	0+0	$\frac{-8.220\text{M}}{\beta^- 1.30\text{s}}$
$\frac{486.834}{486.26}$	V <sub>23</sub> <sup>57</sup>	$\frac{56.95195}{56.95256}$	23n	2+0	8+0	1+8	1+2	0+1	0+0	0+0	$\frac{-9.100\text{M}}{\beta^- 0.32\text{s}}$
$\frac{505.153}{505.32}$	Cr <sub>24</sub> <sup>59</sup>	$\frac{58.94877}{58.94859}$	24n	2+0	8+0	2+8	0+2	0+1	1+0	0+0	$\frac{-8.600\text{M}}{\beta^- 1.05\text{s}}$
$\frac{524.179}{524.35}$	Mn <sub>25</sub> <sup>61</sup>	$\frac{60.94483}{60.94465}$	25n	2+0	8+0	2+8	0+3	1+0	1+0	0+0	$\frac{-9.980\text{M}}{\beta^- 0.67\text{s}}$
$\frac{544.256}{543.70}$	Fe <sub>26</sub> <sup>63</sup>	$\frac{62.93977}{62.94037}$	26n	2+0	8+0	4+7	0+4	1+0	0+0	0+0	$\frac{-10.17\text{M}}{\beta^- 6.10\text{s}}$

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$\frac{563.462}{562.68}$	Co <sup>65</sup> <sub>27</sub>	$\frac{64.93564}{64.93648}$	27n	2+0	8+0	6+6	0+5	0+0	0+0	0+0	$\frac{-9.868M}{\beta^- 1.16s}$
$\frac{580.867}{582.62}$	Ni <sup>67</sup> <sub>28</sub>	$\frac{66.93345}{66.93157}$	28n	2+0	8+0	6+6	1+5	0+0	0+0	0+0	$\frac{-10.532M}{\beta^- 21.0s}$
$\frac{598.271}{599.97}$	Cu <sup>69</sup> <sub>29</sub>	$\frac{68.93125}{68.92943}$	29n	2+0	8+0	8+5	0+6	0+0	0+0	0+0	$\frac{-8.976M}{\beta^- 2.85m}$
$\frac{615.666}{616.92}$	Zn <sup>71</sup> <sub>30</sub>	$\frac{70.92907}{70.92772}$	30n	2+0	8+0	8+5	1+6	0+0	0+0	0+0	$\frac{-6.011M}{\beta^- 2.45m}$
$\frac{633.064}{634.65}$	Ga <sup>73</sup> <sub>31</sub>	$\frac{72.92688}{72.92517}$	31n	2+0	8+0	10+4	0+7	0+0	0+0	0+0	$\frac{-6.388M}{\beta^- 4.86h}$
$\frac{650.456}{652.17}$	Ge <sup>75</sup> <sub>32</sub>	$\frac{74.92470}{74.92286}$	32n	2+0	8+0	10+4	1+7	0+0	0+0	0+0	$\frac{-6.952M}{\beta^- 82.78m}$
$\frac{667.851}{669.59}$	As <sup>77</sup> <sub>33</sub>	$\frac{76.92252}{76.92065}$	33n	2+0	8+0	12+3	0+8	0+0	0+0	0+0	$\frac{-6.642M}{\beta^- 38.83h}$
$\frac{685.241}{686.95}$	Se <sup>79</sup> <sub>34</sub>	$\frac{78.92034}{78.91850}$	34n	2+0	8+0	12+3	1+8	0+0	0+0	0+0	$\frac{-6.4861M}{\beta^- 2.95 \cdot 10^5 a}$
$\frac{702.636}{704.37}$	Br <sup>81</sup> <sub>35</sub>	$\frac{80.91815}{80.91629}$	35n	2+0	8+0	14+2	0+9	0+0	0+0	0+0	$\frac{-6.4841M}{st}$
$\frac{720.026}{721.74}$	Kr <sup>83</sup> <sub>36</sub>	$\frac{82.91597}{82.91414}$	36n	2+0	8+0	14+2	1+9	0+0	0+0	0+0	$\frac{-6.4976M}{st}$
$\frac{737.420}{739.28}$	Rb <sup>85</sup> <sub>37</sub>	$\frac{84.91379}{84.91179}$	37n	2+0	8+0	16+1	0+10	0+0	0+0	0+0	$\frac{-6.6167M}{st}$
$\frac{754.808}{757.35}$	Sr <sup>87</sup> <sub>38</sub>	$\frac{86.91161}{86.90888}$	38n	2+0	8+0	16+1	1+10	0+0	0+0	0+0	$\frac{-7.3149M}{st}$
$\frac{772.201}{775.54}$	Y <sup>89</sup> <sub>39</sub>	$\frac{88.90943}{88.90585}$	39n	2+0	8+0	18+0	0+11	0+0	0+0	0+0	$\frac{-7.9672M}{st}$
$\frac{789.586}{791.08}$	Zr <sup>91</sup> <sub>40</sub>	$\frac{90.90726}{90.90565}$	40n	2+0	8+0	18+0	1+11	0+0	0+0	0+0	$\frac{-5.4422M}{st}$
$\frac{806.970}{805.76}$	Nb <sup>93</sup> <sub>41</sub>	$\frac{92.90508}{92.90638}$	41n	2+0	8+0	18+0	2+11	0+0	0+0	0+0	$\frac{-1.9295M}{st}$
$\frac{821.970}{821.63}$	Mo <sup>95</sup> <sub>42</sub>	$\frac{94.90547}{94.90584}$	42n	2+0	8+0	18+0	2+11	1+0	0+0	0+0	$\frac{-2.2395M}{st}$

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$\frac{836.904}{836.50}$	$\text{Tc}_{43}^{97}$	$\frac{96.90593}{96.90637}$	43n	2+0	8+0	18+0	4+10	0+1	0+0	0+0	$\frac{-2.435\text{M}}{\text{ce } 4.21 \cdot 10^6 \text{a}}$
$\frac{851.770}{852.25}$	$\text{Ru}_{44}^{99}$	$\frac{98.90646}{98.90594}$	44n	2+0	8+0	18+0	4+10	1+1	0+0	0+0	$\frac{-2.3332\text{M}}{\text{st}}$
$\frac{867.698}{867.41}$	$\text{Rh}_{45}^{101}$	$\frac{100.90585}{100.90616}$	45n	2+0	8+0	18+0	5+10	0+1	1+0	0+0	$\frac{-2.612\text{M}}{\text{ce } 3.30\text{a}}$
$\frac{882.445}{882.83}$	$\text{Pd}_{46}^{103}$	$\frac{102.90651}{102.90609}$	46n	2+0	8+0	18+0	5+10	1+1	1+0	0+0	$\frac{-2.2873\text{M}}{\text{ce } 16.991\text{d}}$
$\frac{898.286}{897.79}$	$\text{Ag}_{47}^{105}$	$\frac{104.90599}{104.90653}$	47n	2+0	8+0	18+0	8+9	0+1	0+1	0+0	$\frac{-2.084\text{M}}{\text{ce } 41.29\text{d}}$
$\frac{912.914}{913.06}$	$\text{Cd}_{48}^{107}$	$\frac{106.90678}{106.90662}$	48n	2+0	8+0	18+0	8+9	1+1	0+1	0+0	$\frac{-1.932\text{M}}{\text{ce } 6.50\text{h}}$
$\frac{927.479}{927.93}$	$\text{In}_{49}^{109}$	$\frac{108.90763}{108.90715}$	49n	2+0	8+0	18+0	10+8	0+2	0+1	0+0	$\frac{-1.843\text{M}}{\text{ce } 4.167\text{h}}$
$\frac{943.398}{942.74}$	$\text{Sn}_{50}^{111}$	$\frac{110.90703}{110.90773}$	50n	2+0	8+0	18+0	10+8	0+3	1+0	0+0	$\frac{-1.376\text{M}}{\text{ce } 35.3\text{m}}$
$\frac{956.409}{956.58}$	$\text{Sb}_{51}^{113}$	$\frac{112.90955}{112.909372}$	51n	2+0	8+0	18+0	12+7	0+3	0+1	0+0	$\frac{-353\text{M}}{\text{ce } 6.67\text{m}}$
$\frac{969.322}{969.58}$	$\text{Te}_{52}^{115}$	$\frac{114.91218}{114.91190}$	52n	2+0	8+0	18+0	12+7	0+3	1+1	0+0	$\frac{1.450\text{M}}{\text{ce } 5.80\text{m}}$
$\frac{983.841}{983.31}$	$\text{I}_{53}^{117}$	$\frac{116.91309}{116.91365}$	53n	2+0	8+0	18+0	13+6	0+5	1+0	0+0	$\frac{1.560\text{M}}{\text{ce } 2.22\text{m}}$
$\frac{996.585}{997.03}$	$\text{Xe}_{54}^{119}$	$\frac{118.91589}{118.915411}$	54n	2+0	8+0	18+0	15+5	0+5	0+1	0+0	$\frac{840\text{K}}{\text{ce } 5.80\text{m}}$
$\frac{1010.73}{1010.7}$	$\text{Cs}_{55}^{121}$	$\frac{120.91720}{120.917229}$	55n	2+0	8+0	18+0	15+5	1+5	0+1	0+0	$\frac{910\text{K}}{\text{ce } 155\text{s}}$
$\frac{1024.80}{1024.6}$	$\text{Ba}_{56}^{123}$	$\frac{122.91858}{122.91878}$	56n	2+0	8+0	18+0	17+4	0+6	0+1	0+0	$\frac{715\text{K}}{\text{ce } 2.70\text{m}}$
$\frac{1037.53}{1038.1}$	$\text{La}_{57}^{125}$	$\frac{124.92141}{124.920816}$	57n	2+0	8+0	18+0	16+4	1+7	1+0	0+0	$\frac{920\text{K}}{\text{ce } 64.8\text{s}}$
$\frac{1051.47}{1051.7}$	$\text{Ce}_{58}^{127}$	$\frac{126.92293}{126.92273}$	58n	2+0	8+0	18+0	18+3	0+8	1+0	0+0	$\frac{1.250\text{M}}{\text{ce } 34.0\text{s}}$
$\frac{1065.33}{1064.8}$	$\text{Pr}_{59}^{129}$	$\frac{128.92454}{128.92510}$	59n	2+0	8+0	18+0	18+3	1+8	1+0	0+0	$\frac{1.560\text{M}}{\text{ce } 30.0\text{s}}$

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$\frac{1077.57}{1078.2}$	Nd <sub>60</sub> <sup>131</sup>	$\frac{130.92789}{130.92725}$	60n	2+0	8+0	18+0	20+2	1+8	0+1	0+0	$\frac{1.780\text{M}}{\text{ce } 25.4\text{S}}$
$\frac{1091.29}{1091.2}$	Pm <sub>61</sub> <sup>133</sup>	$\frac{132.92965}{132.92978}$	61n	2+0	8+0	18+0	22+1	0+9	0+1	0+0	$\frac{1.940\text{M}}{\text{ce } 13.5\text{S}}$
$\frac{1103.60}{1104.0}$	Sm <sub>62</sub> <sup>135</sup>	$\frac{134.93293}{134.93252}$	62n	2+0	8+0	18+0	21+1	1+10	1+0	0+0	$\frac{2.490\text{M}}{\text{ce } 10.3\text{S}}$
$\frac{1117.17}{1116.5}$	Eu <sub>63</sub> <sup>137</sup>	$\frac{136.93485}{136.93557}$	63n	2+0	8+0	18+0	23+0	0+11	1+0	0+0	$\frac{2.970\text{M}}{\text{ce } 11.0\text{S}}$
$\frac{1129.06}{1129.4}$	Gd <sub>64</sub> <sup>139</sup>	$\frac{138.93858}{138.93824}$	64n	2+0	8+0	18+0	23+0	2+10	0+1	0+0	$\frac{2.800\text{M}}{\text{ce } 5.80\text{S}}$
$\frac{1141.97}{1141.7}$	Tb <sub>65</sub> <sup>141</sup>	$\frac{140.94121}{140.94145}$	65n	2+0	8+0	18+0	26+2	0+2	0+6	0+1	$\frac{3.050\text{M}}{\text{ce } 3.50\text{S}}$
$\frac{1154.66}{1154.9}$	Dy <sub>66</sub> <sup>143</sup>	$\frac{142.94407}{142.94383}$	66n	2+0	8+0	18+0	26+2	0+2	0+7	1+0	$\frac{3.040\text{M}}{\text{ce } 5.60\text{S}}$
$\frac{1167.20}{1167.1}$	Ho <sub>67</sub> <sup>145</sup>	$\frac{144.94710}{144.94720}$	67n	2+0	8+0	18+0	27+1	0+4	1+5	0+1	$\frac{3.00\text{M}}{\text{ce } 2.40\text{S}}$
$\frac{1180.00}{1180.3}$	Er <sub>68</sub> <sup>147</sup>	$\frac{146.94985}{146.94949}$	68n	2+0	8+0	18+0	26+1	1+5	1+5	1+0	$\frac{3.140\text{M}}{\text{ce } 2.50\text{S}}$
$\frac{1192.86}{1192.7}$	Tm <sub>69</sub> <sup>149</sup>	$\frac{148.95253}{148.95272}$	69n	2+0	8+0	18+0	27+1	1+4	1+6	1+0	$\frac{2.800\text{M}}{\text{ce } 0.90\text{S}}$
$\frac{1205.41}{1205.6}$	Yb <sub>70</sub> <sup>151</sup>	$\frac{150.95555}{150.95540}$	70n	2+0	8+0	18+0	30+1	0+3	0+3	1+4	$\frac{2.600\text{M}}{\text{ce } 1.60\text{S}}$
$\frac{1217.20}{1217.8}$	Lu <sub>71</sub> <sup>153</sup>	$\frac{152.95938}{152.95877}$	71n	2+0	8+0	18+0	29+0	2+4	0+7	1+0	$\frac{3.100\text{M}}{\alpha } 0.90\text{S}$
$\frac{1228.58}{1228.8}$	Hf <sub>72</sub> <sup>155</sup>	$\frac{154.96366}{154.96339}$	72n	2+0	8+0	18+0	32+0	0+2	0+7	1+2	$\frac{5.00\text{M}}{\text{ce } 0.84\text{S}}$
$\frac{1239.62}{1239.7}$	Ta <sub>73</sub> <sup>157</sup>	$\frac{156.96829}{156.96819}$	73n	2+0	8+0	18+0	31+0	3+1	0+9	0+1	$\frac{6.355\text{M}}{\alpha } 10.1\text{ms}$
$\frac{1250.62}{1250.7}$	W <sub>74</sub> <sup>159</sup>	$\frac{158.97298}{158.97292}$	74n	2+0	8+0	18+0	31+0	3+1	1+9	0+1	$\frac{6.450\text{M}}{\alpha } 7.30\text{ms}$
$\frac{1261.25}{1261.7}$	Re <sub>75</sub> <sup>161</sup>	$\frac{160.97805}{160.97759}$	75n	2+0	8+0	18+0	32+0	2+0	2+10	0+1	$\frac{6.328\text{M}}{\text{ce } 0.44\text{ms}}$
$\frac{1272.17}{1272.3}$	Os <sub>76</sub> <sup>163</sup>	$\frac{162.98282}{162.98269}$	76n	2+0	8+0	18+0	32+0	2+0	3+10	0+1	$\frac{6.680\text{M}}{\alpha } 5.50\text{ms}$

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$\frac{1282.78}{1283.2}$	$\text{Ir}_{77}^{165}$	$\frac{164.98792}{164.98752}$	77n	2+0	8+0	18+0	32+0	2+0	4+10	0+1	$\frac{6.830\text{M}}{\alpha < 1\mu\text{S}}$
$\frac{1293.40}{1293.4}$	$\text{Pt}_{78}^{167}$	$\frac{166.99298}{166.99298}$	78n	2+0	8+0	18+0	32+0	2+0	5+10	0+1	$\frac{7.160\text{M}}{\alpha 0.90\text{ms}}$
$\frac{1303.92}{1304.0}$	$\text{Au}_{79}^{169}$	$\frac{168.99823}{168.99808}$	79n	2+0	8+0	18+0	32+0	2+0	6+10	0+1	$\frac{7.400\text{M}}{\alpha 150\mu\text{S}}$
$\frac{1314.26}{1314.1}$	$\text{Hg}_{80}^{171}$	$\frac{171.00359}{171.00376}$	80n	2+0	8+0	18+0	31+0	6+0	4+9	0+2	$\frac{7.668\text{M}}{\alpha 59\mu\text{S}}$