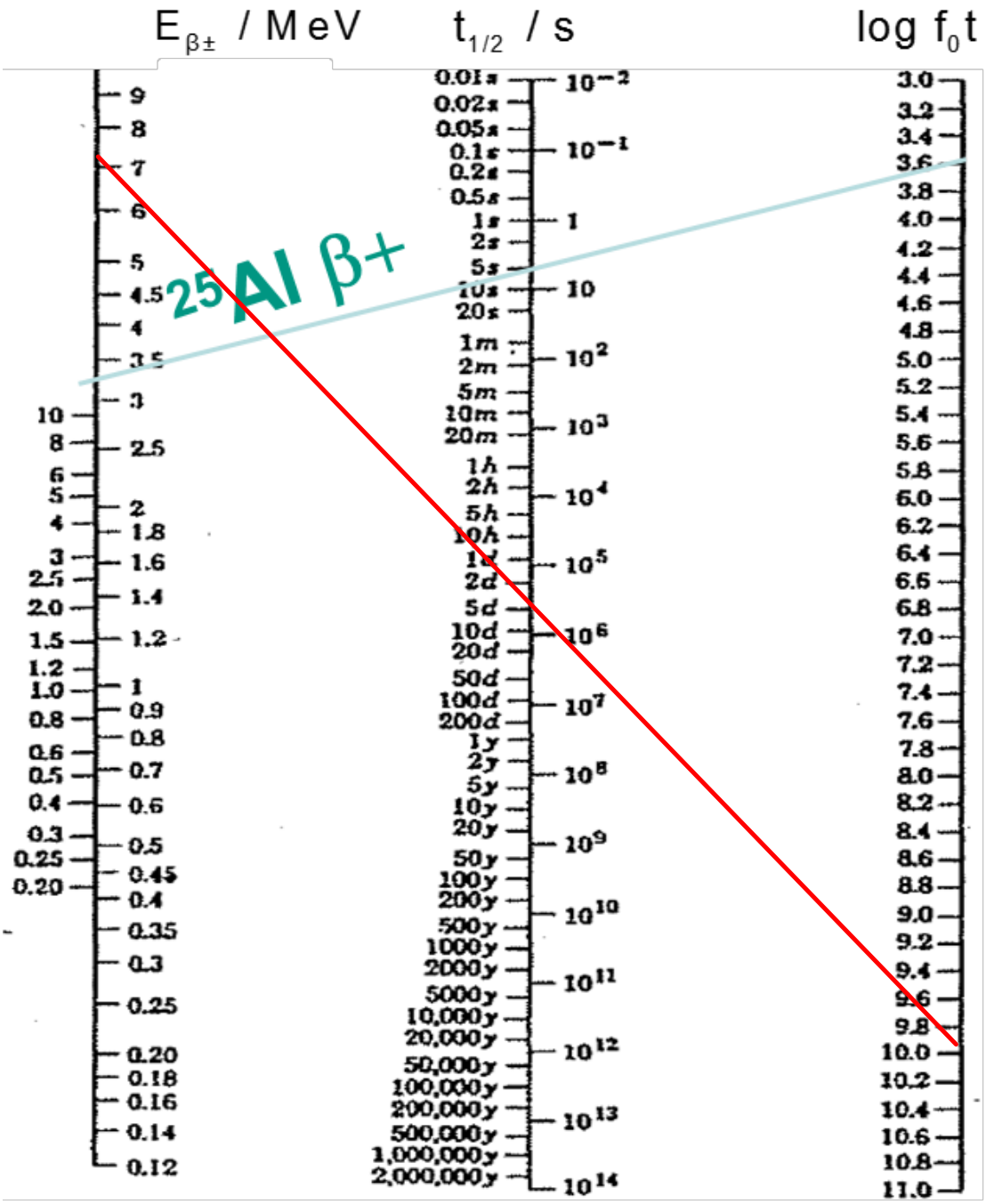
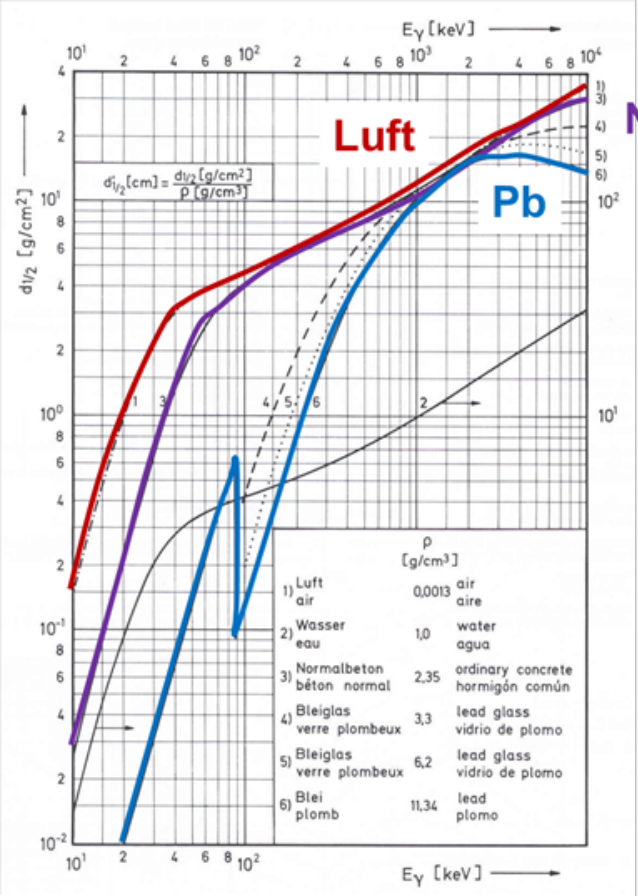


Aus Loveland Modern Nuclear Chemistry

Gamma Strahlung

- Durchdringend
- Pb Zur Abschirmung
- Energieabhängigkeit
- Materialabhängigkeit
- exp. Schwächung
-
-



Halbwertsdicke für γ-Strahler Einheit g/cm²(!)

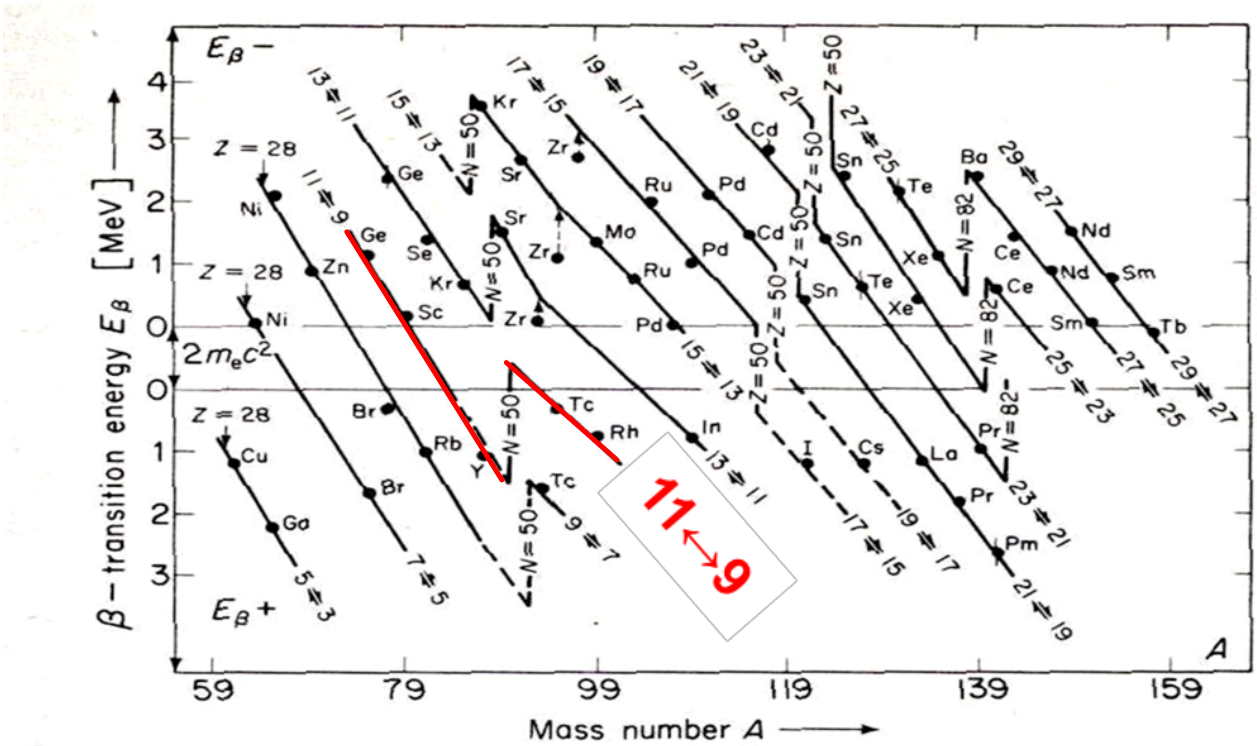


Fig. 15-17. Plot of the β-transition energy for nuclei in the region $28 \leqslant Z \leqslant 64$ which have the same neutron excess and which undergo the decay process

$$ {}^{A}_{Z}X_{N+1} \underset{\beta^+,\,\text{E.C.}}{\overset{\beta^-}{\rightleftharpoons}} {}^{A}_{Z+1}X_{N} $$

with Z and N even. (From [May 55].) (Used by permission of Wiley and Sons, New York.)

Das Schalenmodell des Atoms

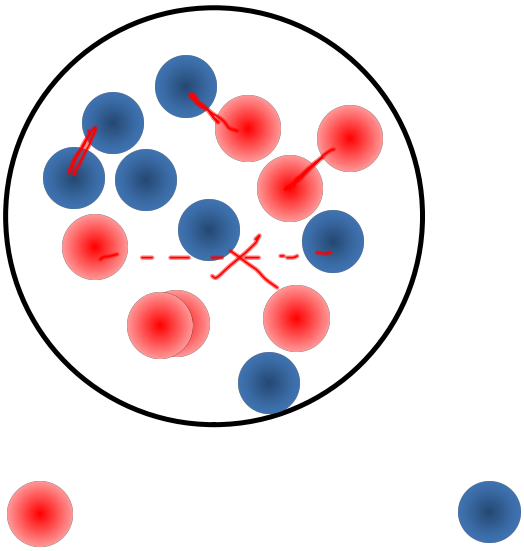
$$H = \sum_{i=1}^{Z} T_i + \sum_{i=1}^{Z} V_C(r_i) + \sum_{\substack{i,j=1 \\ i \neq j}}^{Z} V_{ij}(|\vec{r}_i - \vec{r}_j|)$$

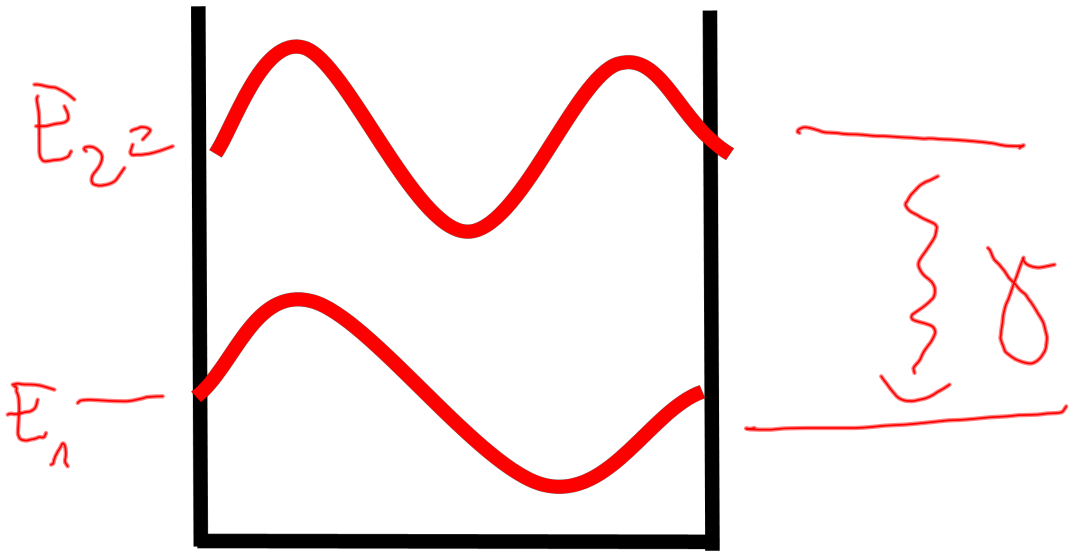
$T_i = -\frac{h^2}{2m_i}\Delta_i$ kinetische Energie

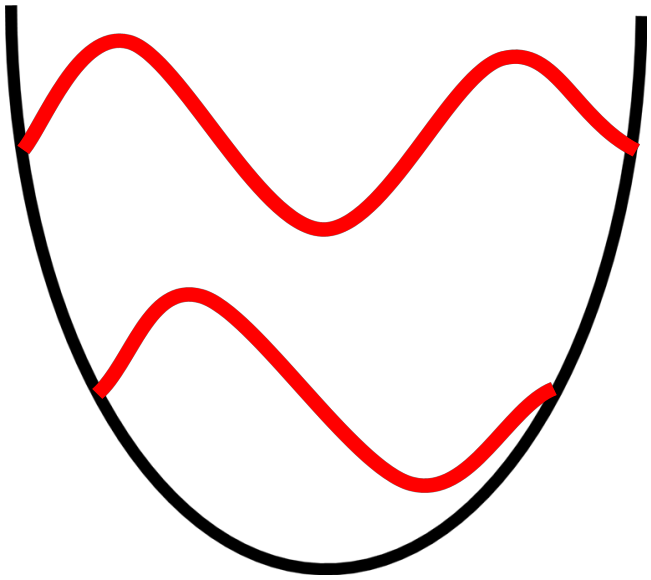
V_C Zentralpotential, Coulombpotential

$V_{i,j}$ Wechselwirkungspotential

SK Potential




E_2
E_1
γ



Schalenmodell

- Selbstkonsistentes Potential
  - Oszillator
  - Rechteck
  - Woods Saxon
- Spin Orbit Kopplung
- Deformation (Nilsson-Modell)

Schalenmodell

- Selbstkonsistentes Potential
  - Oszillator
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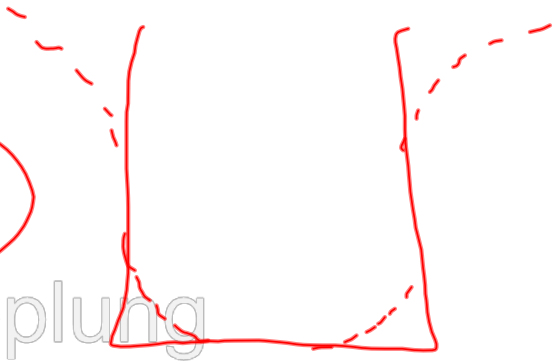
  - Woods Saxon



- Spin Orbit Kopplung
- Deformation (Nilsson-Modell)

Schalenmodell

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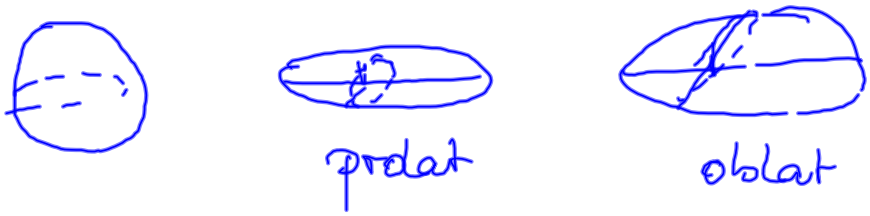
Deformation



Schalenmodell

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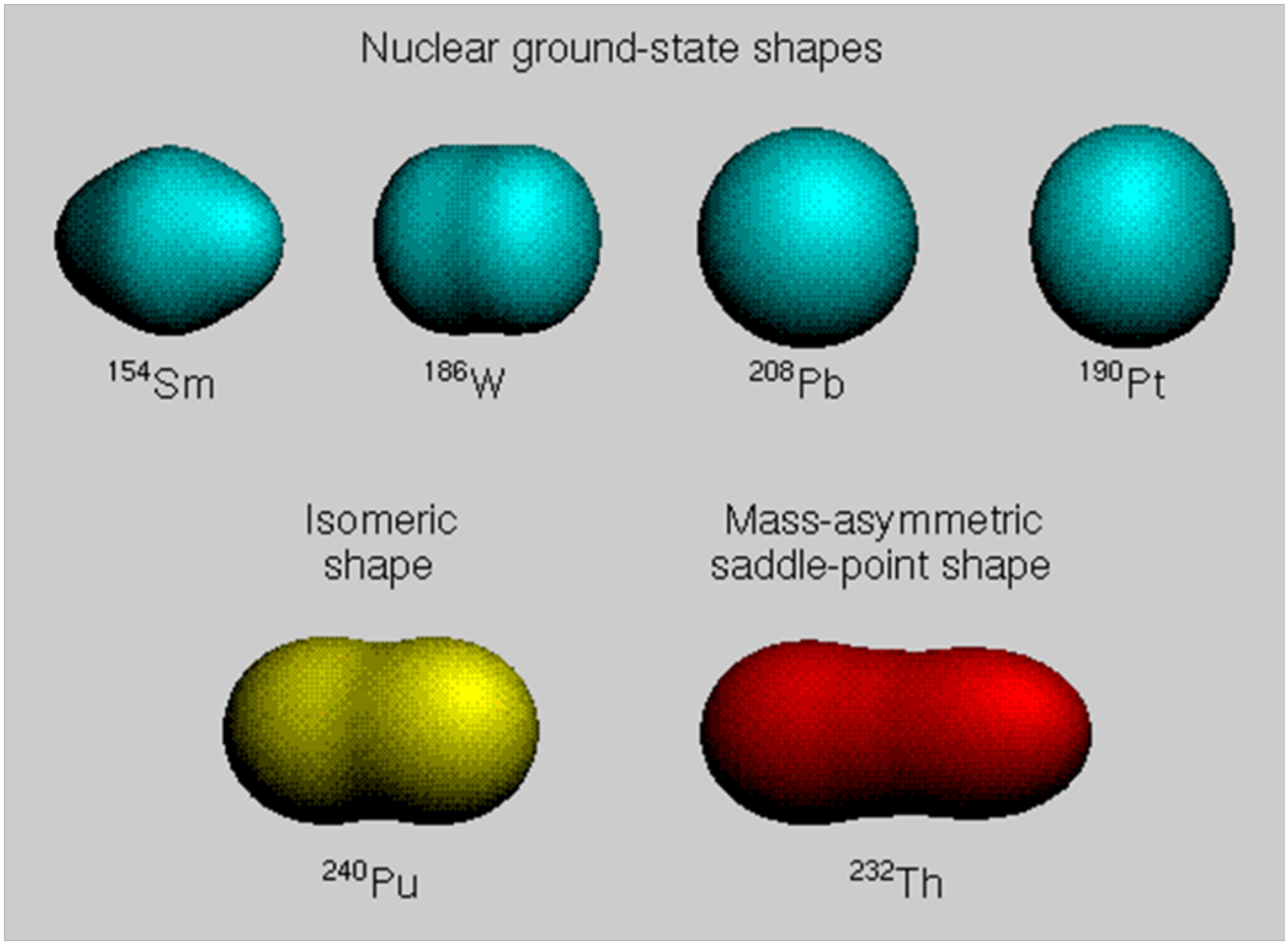
- Deformation (Nilsson-Modell)

Grundzustandsformen von Kernen



http://radchem.nevada.edu/classes/rdch702/images/nuclear%20shapes.gif