

Altersbestimmung

① C-14-Methode

12,5% sind 3 Halbwertszeiten

$$3 \cdot 5730a = 17190a$$

② $1g$; 2000a

$$N(t) = 143 \left(\frac{1}{2}\right)^{\frac{t}{T}}$$

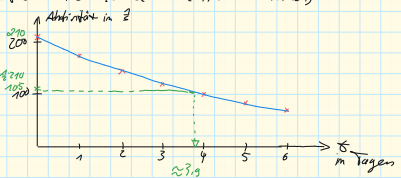
$$N(2000a) = 143 \cdot \frac{1}{2}^{\frac{2000}{5730}} \approx 11 \frac{1}{3}$$

③ U-238

Halbwertszeit $4,5 \cdot 10^9 a$ (4,5 Milliarden)

④ Rn-222

Diagramm:



S. 290 lösen

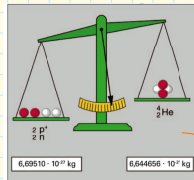
+ A1a

Lichtgeschwindigkeit

$$c = 3 \cdot 10^8 \frac{m}{s}$$

$$E = mc^2$$

$$m = \frac{E}{c^2} = \frac{4 \cdot 10^{26} J}{(3 \cdot 10^8 \frac{m}{s})^2} = 4,4 \cdot 10^9 kg$$



→ Energie

1kg Kohle → 8 kWh

1kg Erdöl → 12 kWh

1kg Uran → 20 000 000 kWh

1 Haushalt 5000 kWh pro Jahr

Atombombe: Plutonium Massendefekt 1g

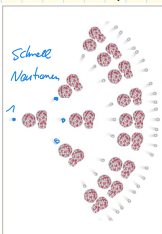
$$E = mc^2$$

Moderne Atombomben 800 mal „Megasch“ Wasserstoff..

16 000 Sprengköpfe

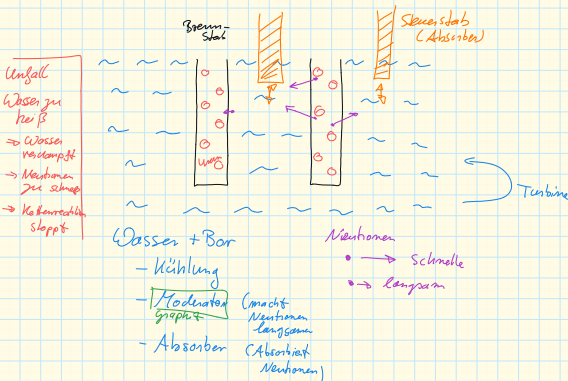
Kettenreaktion

Blatt 3&4

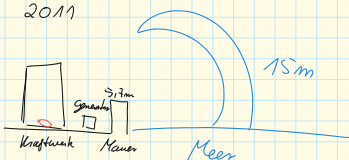


10b	M	PhH (2201)	Flot
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Kernreaktor (Druckwasser)



Fukushima 2011



Tschernobyl 1986

Ukraine

Moderator Graphit!

