

## Neutrón

1930 - Bothe, Becker

$\alpha + \text{Be} \rightarrow$  preroiatac' ziaranis + kocic'o

Prerokalo coz n'ed'ho cu' dove  $\Rightarrow$  mino'ia'ho ucla' v'no'ia' d'f'ca  
↑  
ziarais d'mag

I Curie a F Joliot - vyrd'ia' prvoty z paraf'nu.

- Comptonov jai, energia  $E_p = 5.3 \text{ MeV}$ .

Ake' minia'd'nu energia  $E = h\nu$  musel uat' f'o-  
ton aby uclil prvoty energi T

Energia c'ach'ie

$$E = T + m_0 c^2$$

$$E = \sqrt{m_0^2 c^4 + c^2 p^2}$$

$$(T + m_0 c^2)^2 = m_0^2 c^4 + c^2 p^2$$

$$p^2 c^2 = T^2 + 2 m_0 c^2 T$$

$$T = h\nu - h\nu'$$

$$p^2 c^2 = (h\nu)^2 + (h\nu')^2 + 2 h\nu h\nu' + 2 m_0 c^2 (h\nu - h\nu')$$

$$pc \cos \varphi = h\nu - h\nu' \cos \varphi$$

$$pc \sin \varphi = h\nu' \sin \varphi \Rightarrow$$

$$p^2 c^2 = (h\nu)^2 + (h\nu')^2 \sin^2 \varphi + (h\nu')^2 \cos^2 \varphi - 2 h\nu h\nu' \cos \varphi$$

$$= (h\nu)^2 + (h\nu')^2 - 2(h\nu)(h\nu') \cos \varphi$$

$$(h\nu)^2 + (h\nu')^2 - 2(h\nu)(h\nu') + 2 m_0 c^2 (h\nu - h\nu')$$

$$= (h\nu)^2 + (h\nu')^2 - 2 h\nu h\nu' \cos \varphi$$

$$2 m_0 c^2 (h\nu - h\nu') = 2 h\nu h\nu' (1 - \cos \varphi)$$

Maximality prono'as energije d'  $\varphi = 180^\circ$

$$\Rightarrow 1 - \cos \varphi = 2$$

