~~Est ce que pour introduire un axiome dans une science il est suffisant que cet axiome soit consistant avec les axiomes déjà existants?~~

Decay $\mu \rightarrow e + \nu$

Système repos méson avec ', laboratoire sans:

$U_e' + U_\nu' = \mu c^2$ $\quad p_e' + p_\nu' = 0$

Particules très énergétiques: $U_e' \sim c p_e'$; $U_\nu' \sim c p_\nu'$

$\rightarrow U_e' \sim U_\nu' = \frac{1}{2}\mu c^2$

Let θ' be the angle in the rest-system of the meson, of the electron with respect to the direct. of motion of the meson. Transf. de Lorentz:

$$\left. \begin{aligned} c p_x' &= U_e' \cos\theta' = \tfrac{1}{2}\mu c^2 \cos\theta' \\ U_e' &= \tfrac{1}{2}\mu c^2 \end{aligned} \right\}$$

$$\left. \begin{aligned} U_e &= \left(\sqrt{1-\beta^2}\right)^{-1}\left[U_e' + \beta c p_x'\right] \\ &= \tfrac{1}{2}\left[U + c p \cos\theta\right] \end{aligned} \right\} \quad (29)$$

where U and p are tot. energ. and moment. resped. of the meson.

- Let $f(U_e)\,dU_e$ be the prob. that when a meson of meson p desintegrate, an elect. with energy in dU_e at U_e is produced. The probab. that 1 elect. is emitted in $d\theta'$ at θ' is

$$\frac{2\pi \sin\theta' d\theta'}{4\pi} = \frac{1}{2}\sin\theta' d\theta'$$

Differentiating (29):

$dU_e = \frac{1}{2} c p \sin\theta' d\theta'$ Thus the prob. that an electron is emitted with an energy in dU_e at U_e is $f(U_e)\, dU_e = \frac{dU_e}{c p}$

so that the probab. of emission of an electron of a partic. energy is independ. of this energy