Neutron decay:

$$n \to p + e + \bar{\nu}_e + E_p + E_e + E_{\bar{\nu}_e} + \gamma_*$$

where: E_x is a particle's *kinetic energy*.

Measured[1]: $E_{e,\max} \approx 0.728 \pm 0.013$ MeV.

Einstein found: $E_{\text{kin}} = (\gamma - 1)mc^2$

where γ is the electron's *Lorentz factor*.

We'll neglect: $E_p + E_{\bar{\nu}_e} + \gamma_*$, as well as: $m_{\bar{\nu}_e}$,

leaving: $m_n = m_p + m_e + \frac{E_e}{c^2}$

CODATA 2022:

$$\begin{aligned} m_n &\approx 1.674\,927\,500\,56 \times 10^{-27} \text{ kg;} \\ m_p &\approx 1.672\,621\,925\,95 \times 10^{-27} \text{ kg;} \\ m_e &\approx 9.109\,383\,7139 \times 10^{-31} \text{ kg.} \end{aligned}$$

Would a neutron actually be an electron orbiting a proton,
the virial theorem gives the *potential energy*
as: $E_{\text{pot},e} = -2E_{\text{kin},e} = -2(\gamma - 1)m_e c^2 = -2(m_n - m_p - m_e)c^2$,
which by abs. value equals: $\sim 2.506\,873\,0838 \times 10^{-13}$ J $\approx 1.564\,667\,1101$ MeV.

It also renders: $\gamma = \frac{m_n - m_p}{m_e} \approx 2.530\,988\,5744$

The *Coulomb potential*: $V_{\text{E}} = \frac{Q}{4\pi\varepsilon_0 r}$,

yields: $\left|E_{\text{pot},e}\right| = V_{\text{E}} q_e = \frac{q_p q_e}{4\pi\varepsilon_0 r} = \frac{e^2}{4\pi\varepsilon_0 r} = 2(m_n - m_p - m_e)c^2$,

hence: $r = \frac{e^2}{8\pi\boldsymbol{\varepsilon_0}(m_n - m_p - m_e)\boldsymbol{c^2}} = \frac{\boldsymbol{\mu_0} e^2}{8\pi(m_n - m_p - m_e)}$

(using Maxwell's: $\mu_0 = 1/\varepsilon_0 c^2$).

In https://henk-reints.nl/astro/HR-Geometry-of-universe-slideshow.pdf (p.139–141 as of 2025-07-13),

I substantiate: $\mu_0 \propto t_{\text{H}}$, hence: $\frac{d\mu_0}{dt} \approx \left(\frac{4\pi\times10^{-7}}{13.77\times10^9} \approx 9.126 \times 10^{-7}\right)$ H/m/year

therefore: $\mu_0 = 4\pi \times 10^{-7} + 9.126 \times 10^{-17} \left(\frac{Y - 2018}{\text{year}}\right)$ H/m,

which in 2025 equals: $1.000\,000\,000\,508 \times 4\pi \times 10^{-7}$ H/m

but for now, the good old $4\pi \times 10^{-7}$ is sufficiently accurate.

Then we get: $r = \frac{(4\pi\times10^{-7}\text{ H/m})e^2}{8\pi(m_n - m_p - m_e)} = \frac{(10^{-7}\text{ H/m})e^2}{2(m_n - m_p - m_e)}$

which happens to be: $r \approx 1.2835 \times 10^{-45}$ m.

This significantly differs from what Alexander Unzicker found

in: https://vixra.org/pdf/2411.0178v2.pdf

& https://www.youtube.com/watch?v=lgU_ZXUEXls

Although $\gamma \approx 2.53$, he seems to have used *classical mechanics*
to balance the centri*fu*gal force & the centri*pe*tal *Coulomb force*,
& I think he confused *total energy*: γmc^2 and *kinetic energy*: $(\gamma - 1)mc^2$.

Or I made a stupid error myself, which certainly is a possibility.

[1] See: https://en.wikipedia.org/wiki/Free_neutron_decay