$c := 299792458 \cdot \frac{m}{sec}$ speed of light

$ce := 1.602176462 \cdot 10^{-19} \cdot coul$ absolute value of electron charge

$me := 9.10938188 \cdot 10^{-31} \cdot kg$ free electron rest mass

$mp := 1.6726231 \cdot 10^{-27} \cdot kg$ proton rest mass

$mr := \frac{me \cdot mp}{me + mp}$ reduced electron mass

$\alpha := 7.297352533 \cdot 10^{-3}$ fine structure constant

$a_o := 0.529177249 \cdot 10^{-10} \cdot m$ Bohr radius

$eV := ce \cdot volt$ electron volt

$h := 6.62606876 \cdot 10^{-34} \cdot joule \cdot sec$ Planck's constant

$\varepsilon := 8.854187817 \cdot 10^{-12} \cdot \frac{farad}{m}$ Permittivity of vacuum

$Å := 10^{-10} \cdot m$ Ångström unit

$fm := 10^{-15} \cdot m$ femtometer

$Hz := sec^{-1}$ Hertz

$n \cdot \lambda = p \cdot 2 \cdot \pi \cdot r$ Lissajous

n is the number of DeBroglie waves that fit in p circle circumferences. In short n is the conventional principle quantum number. For obitals above the ground state, p = 1. For those below the ground state, n is 1(?)

$\lambda = \frac{h}{mq \cdot \beta \cdot v}$ De Broglie

$\beta = \frac{1}{\sqrt{1 - \left(\frac{v}{c}\right)^2}}$ Relativistic

$\frac{mq \cdot \beta \cdot v^2}{r} = \frac{ce^2}{4 \cdot \pi \cdot \varepsilon \cdot r^2}$ Force balance

$mr \cdot c^2 - \frac{ce^2}{w \cdot 4 \cdot \pi \cdot \varepsilon \cdot r} = mq \cdot c^2$

Mass - potential equivalence (Note that mq is the rest mass).
The assumption is made that the change in potential energy results in an equal change in the rest mass of the atom.
w is included here as a weighting factor. When w=1, the assumption is that only electron mass is lost with the change in field strength. When w=2, the assumption is that the mass lost comes equally from proton and electron. Other weighting factors allow for the assumption that a larger proportion of the mass loss comes from the proton.
For the remainder of this document, I have chosen w=2, as it seems reasonable to me that the mass loss comes equally from each particle, given that each negates an equivalent amount of the others potential field, and this whole document is based upon the assumption that electric field potential and rest mass are equivalent.

$2 \cdot p \cdot \pi \cdot \frac{r}{n} = \frac{h}{(mq \cdot (\beta \cdot v))}$ Lissajous + De Broglie

$\frac{mq}{\sqrt{1 - \frac{v^2}{c^2}}} \cdot \frac{v^2}{r} = \frac{1}{4} \cdot \frac{ce^2}{\left[\pi \cdot \left(\varepsilon \cdot r^2\right)\right]}$ R + FB

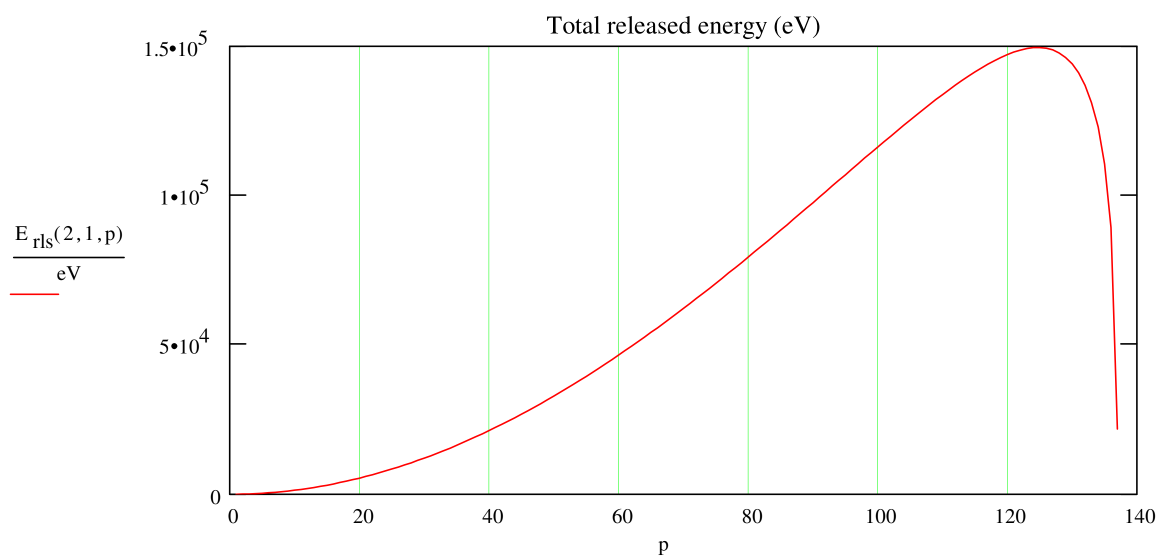
$$v(n,p) := \frac{p \cdot ce^2}{2 \cdot n \cdot h \cdot \varepsilon} \qquad \beta(n,p) := \frac{2}{\sqrt{4 - \frac{\left(ce^4 \cdot p^2\right)}{\left(n^2 \cdot h^2 \cdot \varepsilon^2 \cdot c^2\right)}}}$$

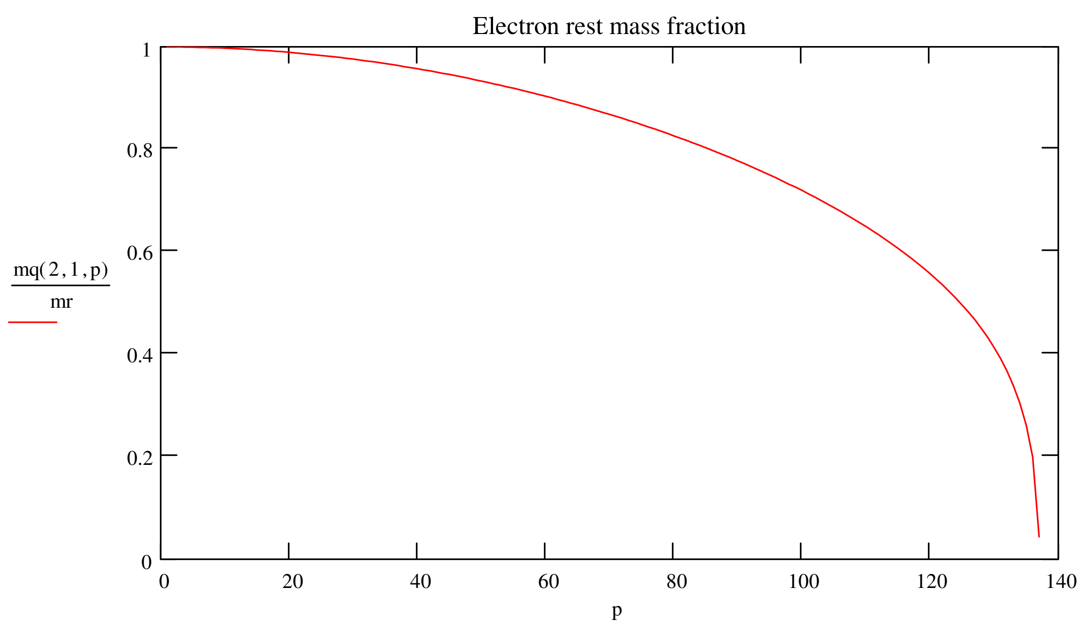
$$r(w,n,p) := \frac{\left[2 \cdot n^2 \cdot h^2 \cdot \varepsilon^2 \cdot w \cdot c^2 \cdot \sqrt{4 - p^2 \cdot \frac{ce^4}{\left(n^2 \cdot h^2 \cdot \varepsilon^2 \cdot c^2\right)}} + p^2 \cdot ce^4\right]}{\left(4 \cdot p^2 \cdot ce^2 \cdot mr \cdot c^2 \cdot w \cdot \pi \cdot \varepsilon\right)}$$

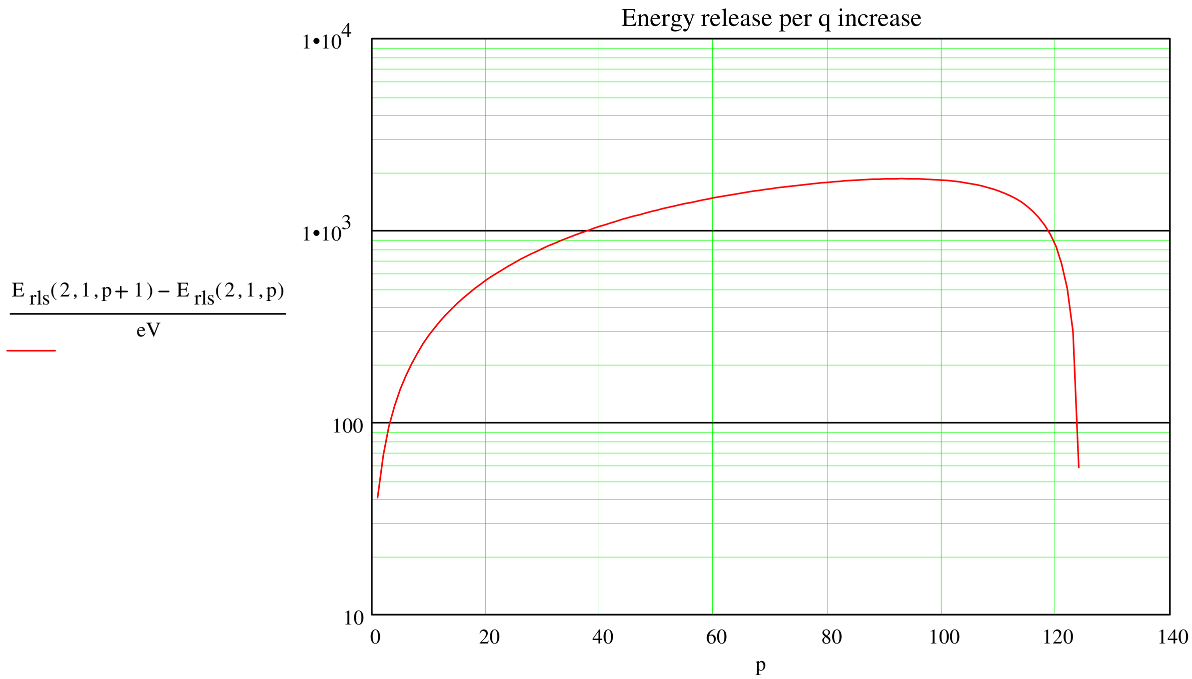
$$mq(w,n,p) := \left[mr - \frac{ce^4 \cdot p^2 \cdot mr}{2 \cdot n^2 \cdot h^2 \cdot \varepsilon^2 \cdot w \cdot c^2 \cdot \sqrt{4 - p^2 \cdot \frac{ce^4}{\left(n^2 \cdot h^2 \cdot \varepsilon^2 \cdot c^2\right)}} + p^2 \cdot ce^4}\right]$$

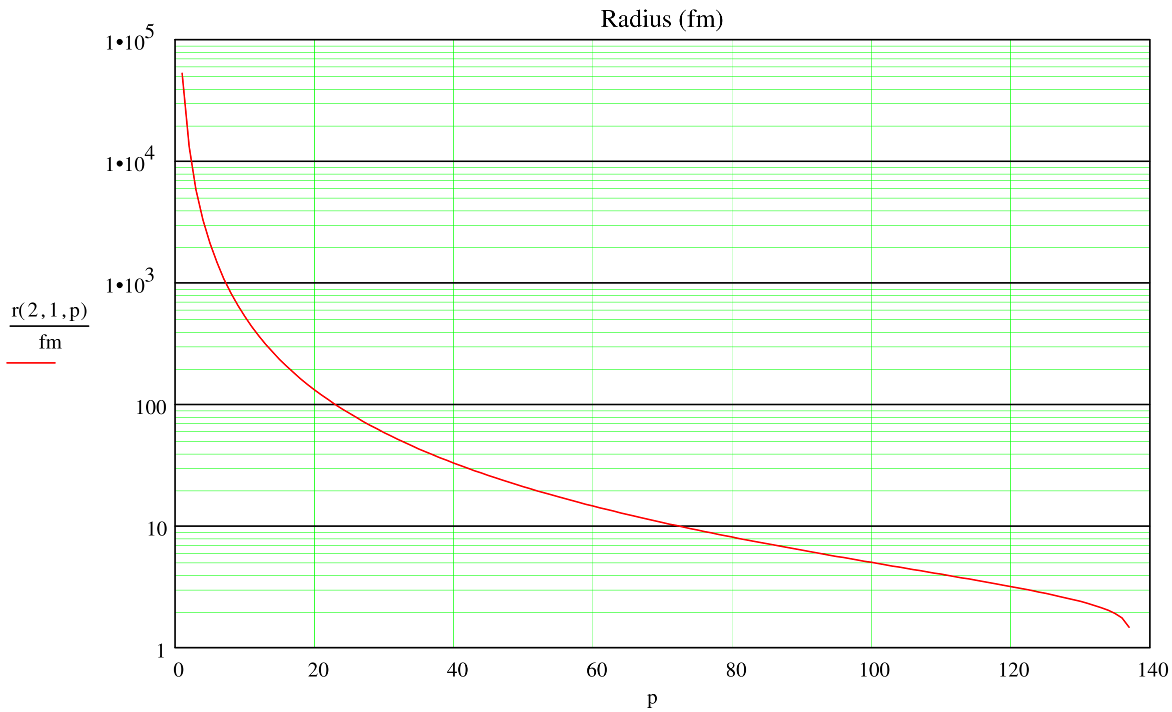
$$E_{rls}(w,n,p) := \frac{ce^2}{4 \cdot \pi \cdot \varepsilon \cdot r(w,n,p)} - (mq(w,n,p) \cdot (\beta(n,p) - 1)) \cdot c^2$$

$p := 1, 2 .. 140$









Note that at the maximum attainable p value (about 120), the radius has dropped to well below 4 fm. Muonic fusion occurs at a distance of about 250 fm, which equates to a p value of 14-15. Consequently it would seem it ought to be reasonably easy to facilitate fusion through shrunken hydrogen.

Example:-

$p := 1, 2 .. 10$

$Ep_p := E_{rls}(2, 1, p)$

Ep =

	0
0	0
1	13.598
2	54.39
3	122.37
4	217.526
5	339.844
6	489.304
7	665.881
8	869.549
9	$1.1 \cdot 10^3$
10	$1.358 \cdot 10^3$

·eV