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Book Review · Open Access

Universal Structural Mechanics

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Abstract

In this paper, we provide some interesting spot calculations from the Theory of Elastic Stability. Certain key constants of Cusack's Astrotheology are derived from basic structural mechanics' formula. No attempts for proofs are made. The reader is referred to Timoshenko and Gere's classic book on stability. Proton Mass was determined to be within the margin of error.

Keywords: Elastic stability; Astrotheology; Moment; Euler's critical load; Golden mean parabola

Introduction

Consider the beam column. Using our knowledge of Physical Constants derived in Astrotheology math, we can derive other variable, such as energy and time. The Super force is sin t. we begin with a column loaded with that Super force load. Then we move on to a beam column loaded laterally as well as axially. We end with Euler's Critical load which allows us to derive the maximum mass in the periodic table of the elements (Figure 1).

Refer to Figure 1 showing cusack's modulus k=cuz=0.4233.

y=sin θ

y'=-cos θ

0.4233=cuz=-cos θ

θ=64.95°=113.37 rads

$=1/0.882\sim1/\varepsilon_0$

And,

θ=64.95°=1/0.1539=1/ (1-sin 1.0085 rads)

1.0085= Mass of H^+

Continuing,

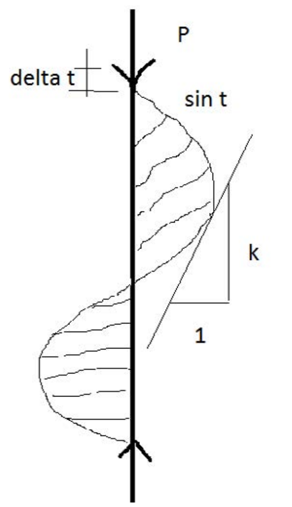

Figure 1: Beam column showing k.

$\int_{0-2\pi}\sin\theta = |-\cos\theta|$

-(-1) -(1)=2=-dM/dt

Δt/dt=1 rad/ 1 sec.

sin 1=0.8415=1/118=1/M (Periodic Table of the elements)

EI d^3y/dx^3+ P dy/dx=-V [1] pg. 2

(0.4233)I(G)+ 2.667(0.8415)=-1.617

I=0, 4936

1/I=Y=0.202

I=1/Y where $Y=e^{-t}\cos(2\pi t)$ & t=1

EI d^2M/dx^2=-M [1].

(0.4233) (1/Y)(0.8415)=M= 1758=1.00735 ~Mass H^+ (Figure 2).

d^2y/dx^2+k^2y=-Qc x/ [EIl] [1]

Aside:

k^2=P/[EI]

=2.7667/(1/0.4233)(1/Y)

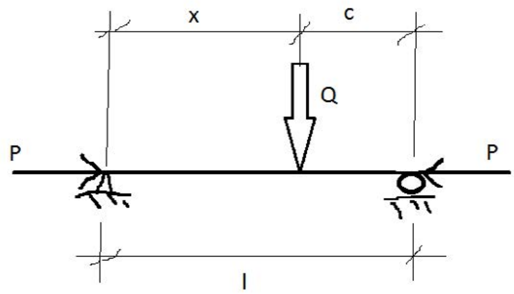

Figure 2: Beam column showing Q.

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$=127.6$

$=\rho$

$-2.667c/[0.4233 \times (1/Y)\ l]\ x$

$6.67 + 127.6 = 127.6\ cx/l$

$cx/l = 522.5$

From the Golden mean parabola with roots -0.618 & 1.618

$(-0.618)\ x/l = 522.5$

$x/l = 118.3 =$ Mass M

$118.3 = x/(1.618+0.618)$

$= x/224$

$x = 52.91 = 1.083$ rads

$522.5 = cx/l$

$522 = c \times 52.91)\ /224$

$c = 221$

$G + 127.6 = 2.667\ c\ x\ /[(0.4233)(1/Y)(l)$

$Y = 202$

$6.67 - 1.27 = 2.667/\ 0.4233 \times x/\ 0.202$

$2.667/0.4233 = 6.3 = l$

$Y(G-\rho) = c(1-c)$

$Y(G-\rho) = c - c^2$

Golden Mean parabola

$c^2 - c + Y(G-\rho) = 0$

$Y(G-\rho) = 1$

$0.202(6.67-1.27) = 1$

$24.5 - 1 = 23.6 = \text{Ln}\ \pi$.

Consider,

$y = Q \sin k(l-c)/[P\ k \sin (kl)] \sin k(l-x) - Q\ (l-c)(l-x)/\ Pl$

Let

$Q = P$

$k = \sqrt{\rho}$

$y = \sin 59.65/[\sqrt{127.6} \times \sin 253] - 522.531$

$y = -0.868$

$y = \sin 60°$

$Y = 0.868 = \sin 60°$

$Y = \sqrt{3}/2$

$Y = t/[dM/dt]$

$dM/dt = t/Y$

$Y = E = dM/dt \times t$

But $E = Mc^2$

$E^2/2 = M\ t^2/2$

$E = [\sqrt{M}]t$

$E = \sqrt{4.482} \times \pi$

$E = 6.65 \sim G$

$EI\ d^2y/dt^2 = -Py$ [1]

$y = y'$

$EI = P$

$0.4233(I) = P$.

$I = 2.667/0.4233 = 6.3 = 1/0.1585 = 1/[1-\sin 1]$

$I = 1/$ moment

Moment $= 1/I$

$F \times d = Y = 1/\ 6.3 = 1585$

$2.667d = 0.1585$

$d = 0.594 \sim 0.6$

Circ. = Area

$2\pi R = \pi R^2$

$R = 2$

Circ $= 2\pi(0.6) = 1/F =$ Area

$E =$ Work $\times t = Fdt$

$F(1/F)(t) = 1$

$t = 1 = E$ (Figure 3).

$EI\ d^2y/dx^2 = P(\delta - y)$ [1]

$(0.4233)(1/Y)(0.8415) = 2.667(\delta - 4/3)$

$1.50\ (\delta - 4/3) = 1$

$1.5\delta - 2.00 = 1$

$1.5\delta = 3$

$\delta = 2 = dM/dt$

$M = 1.77 = \sqrt{\pi}$

$d = 1/F = Y$

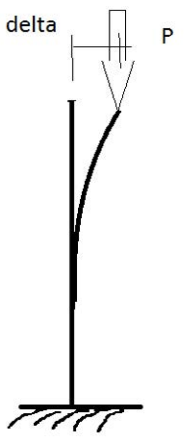

Figure 3: Eccentric load on column.

$\sqrt{\pi}=\delta\text{-}y$

$=\delta\text{-}1/F$

$\delta=\sqrt{\pi}+1/F$

$119.6 \times 943]/ 127.6=88.3=\varepsilon_0$

$\chi u \gg 1$ when $u=\gg 0$

$\chi u \gg \infty$ when $u \gg \pi/2$

$M_{max}=\text{-}EI\ y'= M_0 \sec u$

$(0.4233)(1/Y)(0.8415)=M_0 \sec (\pi/2)$

$M_0=1.7582=1.00762$ = Mass H+

$M_0=Fd$

$175=2.667(1/F)$

$F=6.59\sim 1/152$

$F\sim G$

Finally,

$P_{critical}= 4\pi^4 EI/l^2$ [1]

$2.667=4\pi^4 =(0.4233)(1/0.202)/ l^2$

$I=1.77=\sqrt{\pi}$

$=\sqrt{t}_{\ critical}=\sqrt{(1.618+0.618)}=1.4953\sim 1.50$=Mass Gap.

$\sqrt{\pi}=1.2533^2$

Rigidity:

Aside:

$EI=F$

$(0.4233)I=2.667$

$I=6.3$

$\alpha=2EI/l$

$=2(0.4233)(6.3)/(1/2)$

$=126\sim\rho$

Critical Load:

$\psi(u)=\text{-}3Ib/[4Il]$

$b=l$

$\psi(u)=3/4=1/s$

$\alpha/\psi(u)=\rho/(1/s)=\rho s$=Mass M

Proton Mass: Refer to Figure 4.

$\rho k/ EI$

$=127(0.4233)/2\pi$

$=53.759/2\pi$

$=938.27$

=Proton Mass (Figure 4).

The rigidity of the universe is the density, and the critical load is the Mass.

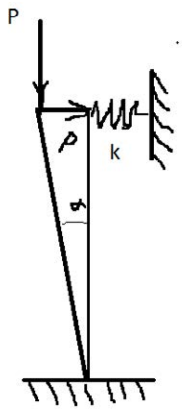

Figure 4: Proton mass column.

$EI\ d^{4y}/dx^4 + P\ d^3y/dx^3 + q/g\ d^2y^2/dx^2=0$ [1]

y=y'' etc.

$EI+P+q/G=0$

$EI+F=G[dM/dx]$.

Mass-Gravity Equation [2]

$dM/dx=[EI +F]/G=[(0.4233)(6.3) + 2.6678]/ 6.67=0.799\sim 0.8\alpha\ 8$

$1/8=1.25=E_{min}$

$M=1/c^4=1/81=0.12345679$ Eight digits

Now Integrate wrt x or s:

$\int dM/dx\ dx= 1/G\ [\int EI\ dx + \int F\ dx]$

$M=1/G \times E\ 4s^5/5 +\int \sin 60°$

$M=1/6.67\times [(0)(0.4233)(4/3)^5 /5 \text{-}\cos 60°]$

$=0.75=3/4$

$M =1/s$

$Ms=Y$

$Ms=Fd\times t$

$dM/dt \times ds/dt =dF/dt \times dd/dt+ dt/dt +C1$

$2(.8415)=(0.5)(0.8415)(1)+C1$

$1683=0.4208 +C1$

$C1=126=\rho$

$1683\text{-}42=1641$

$1641 + 1/c=1641 +33.3333=1674$

$= 1671.6+0.901$

=Mp+ +e.

Conclusion

In this paper, we provided some spot calculations using formula from elasticity stability theory. The beam column and the eccentricity loaded column can be used as a model for certain universal calculations. The rigidity of the universe is the density, and the critical load is the Mass. Perhaps those interested could find more in stability theory to explain Cusack's model of the Universe.

References

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