Fluid Mechanics: Open Access

Cusack, Fluid Mech Open Acc 2017, 4:2
DOI: 10.4172/2476-2296.1000151

Perspective Open Access

Cusack's Universal Bridge

Paul TE Cusack*

Independent Researcher, BSc E, DULE, 1641 Sandy Point Rd, Saint John, NB, Canada E2K 5E8, Canada

Abstract

Here is the Structural Analysis of a bridge design that models the physical universe parameters found in Astrotheology.

Keywords: Cusack's bridge; Cantilever; Spring; 3 Hinged arch

Introduction

Every Civil Engineer should have a chance to design a bridge. So, here I design what I term the Cusack Universal Bridge. It models the physical universe and all its parameters. We begin with the spring (Figure 1).

Spring

F=-ks

26.667=0.4233(s)

s=6.3

s/2=3.15~π

We continued with static equilibrium and the sum of the forces and moments equalling zero.

Static Equilibrium

$\Sigma M_a=M_a-M_b-(1)(F_d)=0$

$\Sigma M_b=M_b+M_a+F_d(6.67)+F_e)-V_a(19.45)=0$

$\Sigma M_e=0-V_a(25.1)-F_b(1/2)(5.465)-F_d(0.866)(7.67)-V_e(1)=0$

$\Sigma M_d=-V_a(25.1)-F_b(1/2)(5.465)-F_d(0.866)(5.465)-V_e(1)=0$

$\Sigma F_x=F_a-F_e-F_b|(0.866)-F_d(1/2)=0$

$\Sigma F_y-26.667+V_a+F_b(1/2)+F_d(0.866)=0$

And continuing,

Dampened Cosine Curve

The Dampened cosine function for a spring,

$Y=e^{-t}\cos\theta=$

Work=F*d

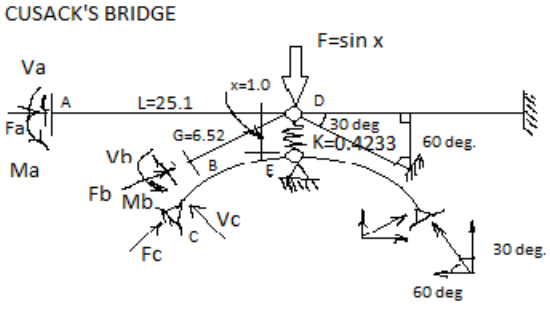

Figure 1: The structural model of the Cusack' universal bridge.

6.3 (26.667)

Let θ=sin 45°=cos 45°

Y=1=s=x in our spring.

Finally, the basic cantilever:

$M_a=(25.1)*(26.667)=669.4$.

Results

When we solve this system of equations we get:

$M_a=75.33$	1/s
$M_b=81.69$	1/M
$F_a=0$	time
$V_a=15.39=1/\sin 1$	1/Force
$F_b=390$	1/Period T=1/E
$F_d=6.56$	Gravitational Constant=G less Nuclear
$V_d=13.334$	space=s
$V_e=14.95$	Mass Gap

$F_e=34=1/c$

k=0.4233=cuz

L=251=T

G=6.67=G

a=v=sin 45=P=F

So all of the Universal parameters are contained here.

s.G,k,.F,t=x=s,Y=G.M., a=v=sin 45deg., dM/dt, δ, freq, c^2 (Figures 2 and 3).

Conclusion

Thus we see that a 3 point arch bridge can be used to model the physical universe and its 12 parameters [1].

***Corresponding author:** Cusack P, Independent Researcher, BSc E, DULE, 1641 Sandy Point Rd, Saint John, NB, Canada E2K 5E8, Canada, Tel: (506) 214-3313; E-mail: st-michael@hotmail.com

Received February 17, 2017; **Accepted** April 05, 2017; **Published** April 15, 2017

Citation: Cusack PTE (2017) Cusack's Universal Bridge. Fluid Mech Open Acc 4: 151. doi: 10.4172/2476-2296.1000151

Copyright: © 2017 Cusack PTE. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

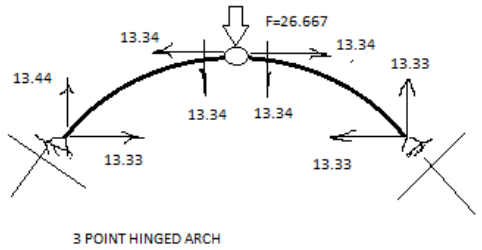

Figure 2: Hinged 3-point arch.

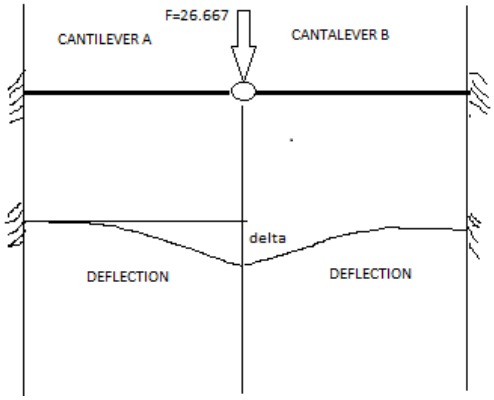

Figure 3: Deflection of two cantilevers.

References

1. Cusack P (2016) Astro-Theology, Cusacks Universe. J Phys Math 7: 174.