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Research Article

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Analytical Solution for Fluid Dynamics

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Abstract
In this important paper, we put fluid dynamics on a theoretic basis for some basic flows. We also put the Hazen Williams and Manning Equation on a theoretical foundation. Various other flow environments may be subject to similar transformations.

1. Introduction

Newtonian Fluids Low Viscosity

Teflon Mass = C2F4 = 2(12.011) + 4(18.989) = 99.989 x 6.022 = 602

$\int 1/2 \rightarrow \pi$ Ln t = 1.602

Mt-1 = M

M = t

PE = KE

PE-KE = 0 Conservation of Energy

$t^2 - t - 1 = 0$ GMP

F = Mα

(49989) (1/√2)

=35.3≈i

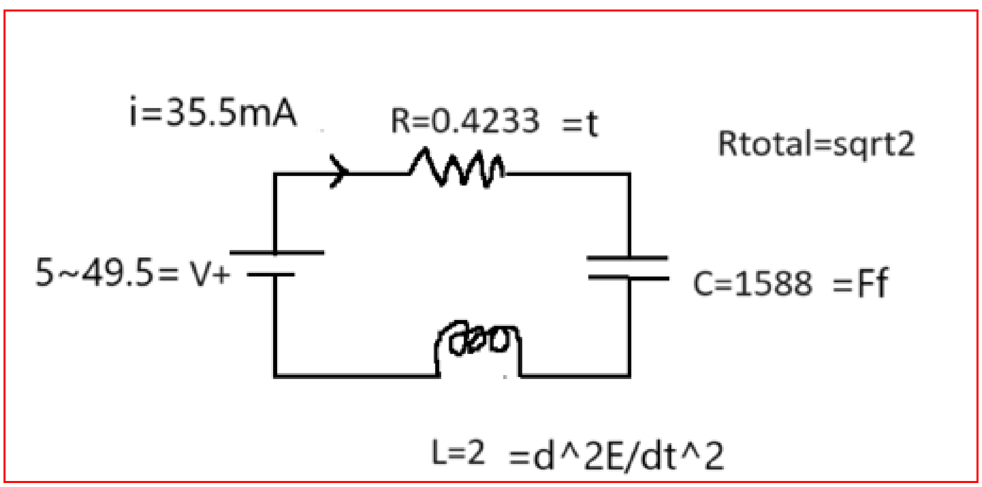

Figure 1: Cusack's RLC Circuit

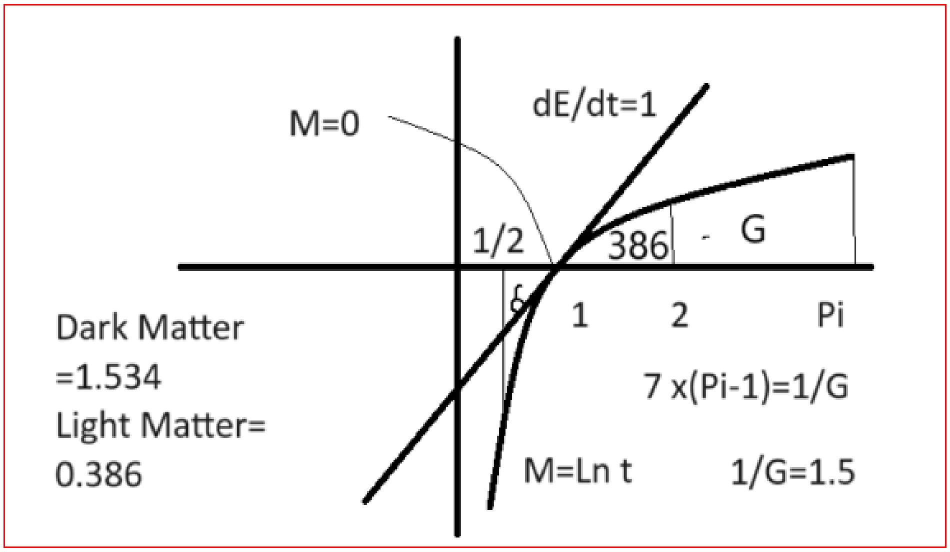

Figure 2: Cusack Exponential Mass-Time Plot

1533.5 x $2\pi/6.693 = 1/0.6946$
15335-1.4645 = -0.0695
$t = e^{M} = e^{-0.0695} = 499 = V^{+}$
Hookes Law
$\sigma = Y\varepsilon$
F/A = (0.4233) t
8/3 = 0.4233t
t = 1/0.1588 = 1/E
$E = \hbar v = \hbar t 6.628(1/0.1588)$
=417
GMP: E=1/511=1/Me- flow of Electricity
$\sin^2 45° + \cos^2 45° = 1 = x^2/a^2 + y^2/b^2$
$\theta = t = \pi/4$

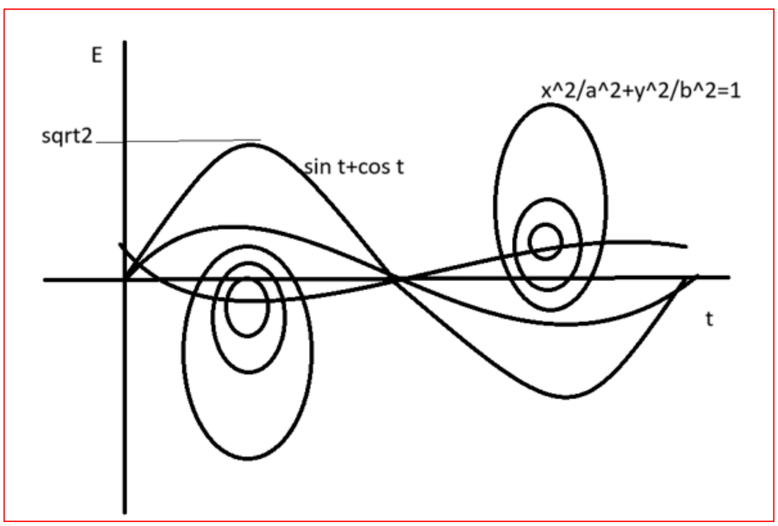

Figure 3: The Vortex Fluid Dynamic

$f_0(x) = ax + 1-a$
= 2x+1-2
= 2t-1 = dE/dt
dy/dx = a = f(x)″ = 2 = G

$y = f_0(x) = ax + b = f(x)'$
$= 2x+b$
$= 2t-1$
$b = 1$
For Laminar flow
Bernoulli
$p + 1/2\rho v^2 + z = 0$
$mgh + 1/2\rho v^2 + 0 = 0$
$PE + KE = 0$
$M = t$
$E = 1- e -1$
$-1/t = 1-1/E$
$-1/t = 1-t$
$-1 = t -t^2$
$t^2- t -1 = 0 \Rightarrow$ GMP sheet flow

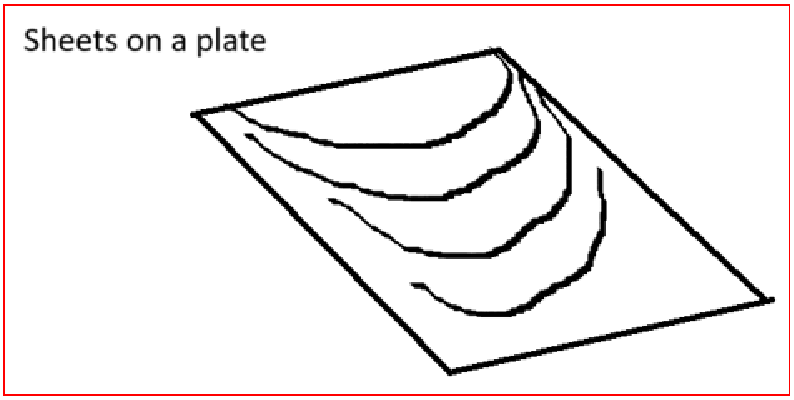

Figure 4: Fluid Flow Down a Sheet

$\hat{v}$ sound=343m/s@20°C
343 x Mach 4=1372=1/0.729 α=fine structure constant

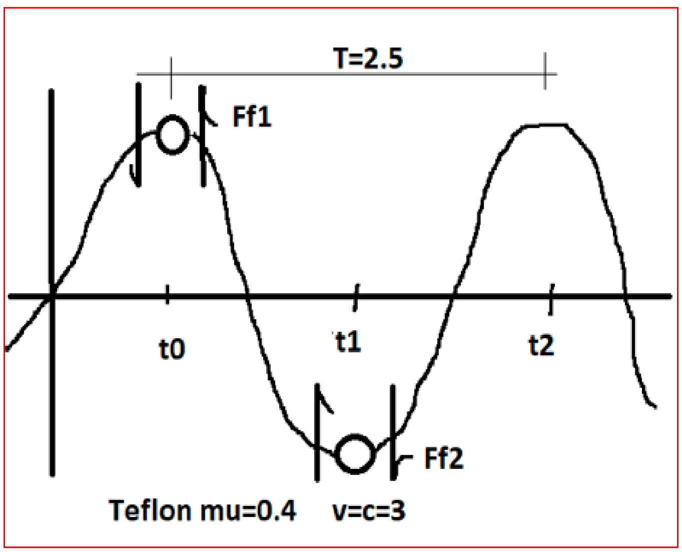

Figure 5: Flow on a Sheet

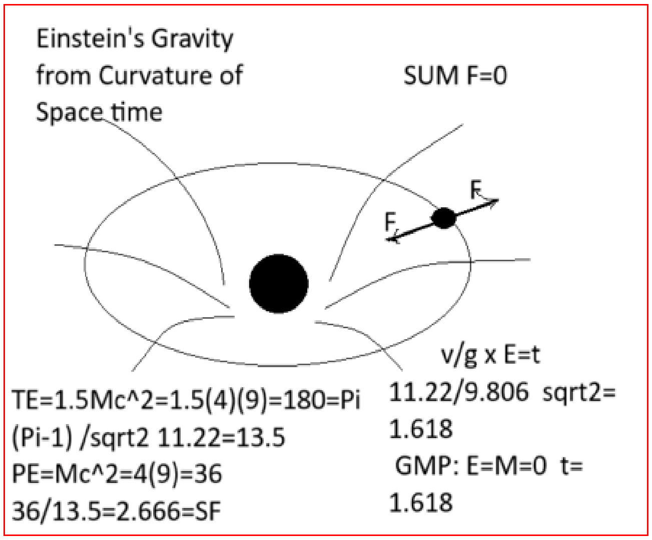

Figure 6: The Comparison of Einstein's Bending of Space and the Zero-Pressure end of a Nozzle.

The GMP reigns for the flow out of a nozzle.

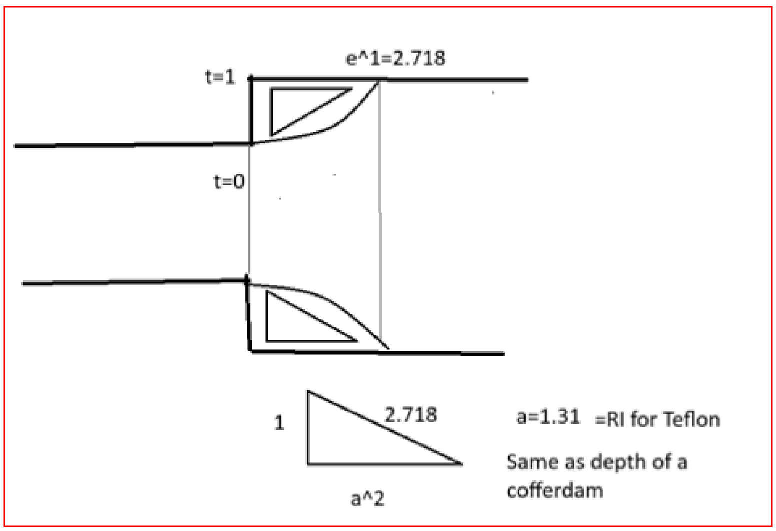

Figure 7: Sudden Opening

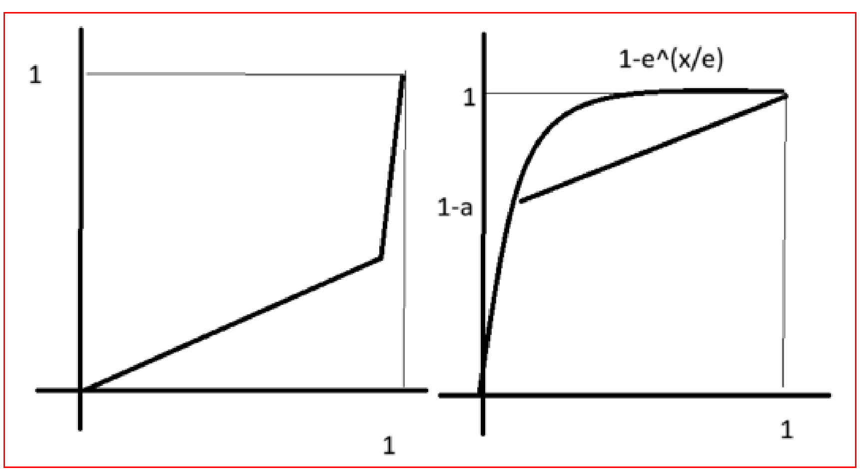

Figure 8: Source [1].

So, we've shown that the GMP is key to analyzing fluid dynamics theoretically
Hazen-Willimam for flow under pressure:
$\hat{v} = 1.318\mathbb{C}R0.63S0.54$
$\hat{v}$ = velocity (ft/sec)
$\mathbb{C}$ = H-W Coefficient
R = Hydraulic Radius (a/P)
S = Head Loss
$\hat{v} = t = 1+1/\pi = 1.318$
$t = 1+1/t$
$t^2 - t - 1 = 0$
$\hat{v}(1/\mathbb{C}) \cdot R0.1588 = (t^2-t-1)$ STE
$t^2-t-1 = TE\cdot\mathbb{C}/RMs$
$t^2-t-1 = 1.5Mc^2\mathbb{C}/RMs$
$t^2-t-1 = 202.5M/R0.1588$
$t^2-t-1 = 0,031MLn\ R$
$t^2-t-1 = 0.031M=-0.497$
$t^2-t-1 = 1/2$
$t^2-t-1.498 = 0$
$t^2-t-1 = 81/R0.1588$
$t^2-t-1 = 81 = 1/M = c^2$
$E = c^2$
$\hat{v} = 1.49/n \times R2/3\cdot S1/2$
$= 1.49/(3.281ft/m) \times R1/G\ S1/2/n$
$= 0.454[R0.454\sqrt{}S]/n$
$= 0.454^2R1.4645\sqrt{}0.4233\sqrt{}/n$
$= 2.06/0.0403\times R1.4645\sqrt{}0.4233$
= 511(1) (6506
= 12046
12046/6.022 = 2.000
$t^2 - t - 1 = 2000$
t = 2; -1
$2^2 - 2 - 1 = 1 = x^2/a^2 + y^2/b^2 = 1 \Rightarrow$Ellipse = vortex
$t = e^M = e^3 = 20.00$

Hazen-Willimam for flow under pressure:

$\hat{v} = 1.318\mathbb{C}R^{0.63}S^{0.54}$
$\hat{v}$ = velocity (ft/sec)
$\mathbb{C}$ = H-W Coefficient
R = Hydraulic Radius (a/P)
S = Head Loss
$\hat{v} = t = 1+1/\pi = 1.318$
$t = 1+1/t$
$t^2 -t - 1 = 0$
$\hat{v}(1/\mathbb{C}) \cdot R^{0.1588} = (t^2 - t - 1) S^{TE}$
$t^2 - t - 1 = TE\cdot\mathbb{C}/RMs$
$t^2 - t - 1 = 1.5Mc^2\mathbb{C}/R^{Ms}$
$t^2 - t - 1 = 202.5M/R^{0.1588}$
$t^2 - t - 1 = 0,031MLn\ R$
$t^2 - t - 1 = 0.031M = -0.497$
$t^2 - t -1 = 1/2$
$t^2 - t - 1.498 = 0$

Note that turbulent flow is subject to the Fair Coin GMP Eqaution.

References

1. Meyer, RE. Introduction to Mathematical Fluid Dynamis. USA: Dover, 1971.