Edit Convert E-Sign
Your files / Scan Oct 7, 2023 (1) PDF
Hi, Shuki
Get unlimited tool access with an Adobe Acrobat plan.
Start free trial
DID YOU KNOW? See more
Work with PDFs in Google Drive
View, annotate, and edit PDFs right in Google Drive.
Get the add-in
YOU MAY LIKE
Compress a PDF
Edit text & images
PDF to JPG
Export a PDF
Combine files
Share
Fill & Sign
Delete pages

$$P(r,t) = \frac{\rho\ddot{V}(t-r/c)}{4\pi r}$$

Quick and dirty

$\frac{1}{r}$ is needed to preserve energy

$t-r/c$ is needed for causality

$\frac{\rho\ddot{V}}{4\pi}$ is not easy

Newton's law

Mass · Acceleration = Force

$\rho$ is Mass/Volume

$\ddot{V}$ is Volumetric accelration

Force is Pressure · Area

The area is $4\pi r^2$

$\rho\ddot{V}$ is $\frac{\text{Mass}}{\text{Time}^2}$ = Force/Length

If the Length is r then

$\rho\ddot{V} = P \cdot 4\pi r^2/r = 4\pi r P$

↳ $P = \frac{\rho\ddot{V}}{4\pi r}$ + Causality

↳ $P(r,t) = \frac{\rho\ddot{V}(t-r/c)}{4\pi r}$

1
1