

Presentation Title



Your name here

Your lab here

University of Michigan, Ann Arbor

Department of Stuff Engineering



February 27, 2014

Here are some pictures of bubbles



Underwater Explosions



Ultrasound Probes



Rotating Propellers

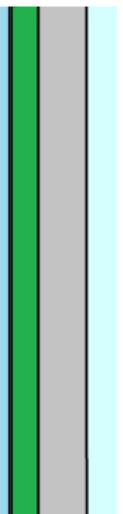
I put some words here for filler when I'm giving a real presentation. Some audiences like that, I'm not sure why.

This slide can act as an example of sequentially changing pictures.

- Bullet points are nice.
- You don't have to say much to take up space.
- If you have dynamic slides like this, use the [handout] option in the document class at the top to condense animations for printing.

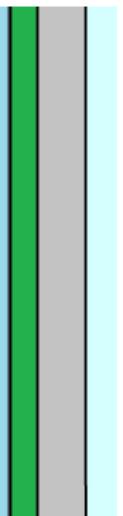
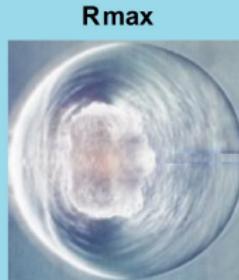
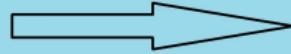
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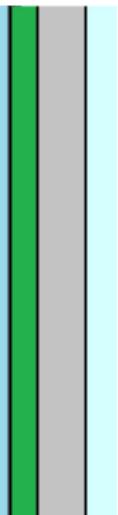
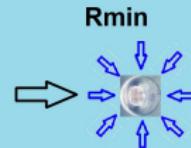
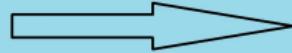
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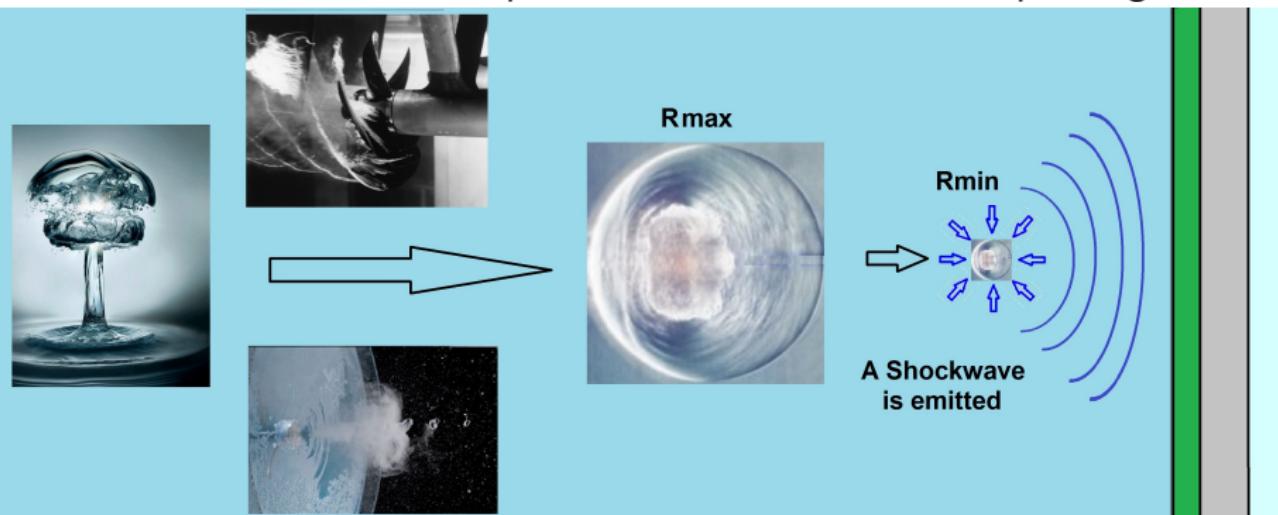
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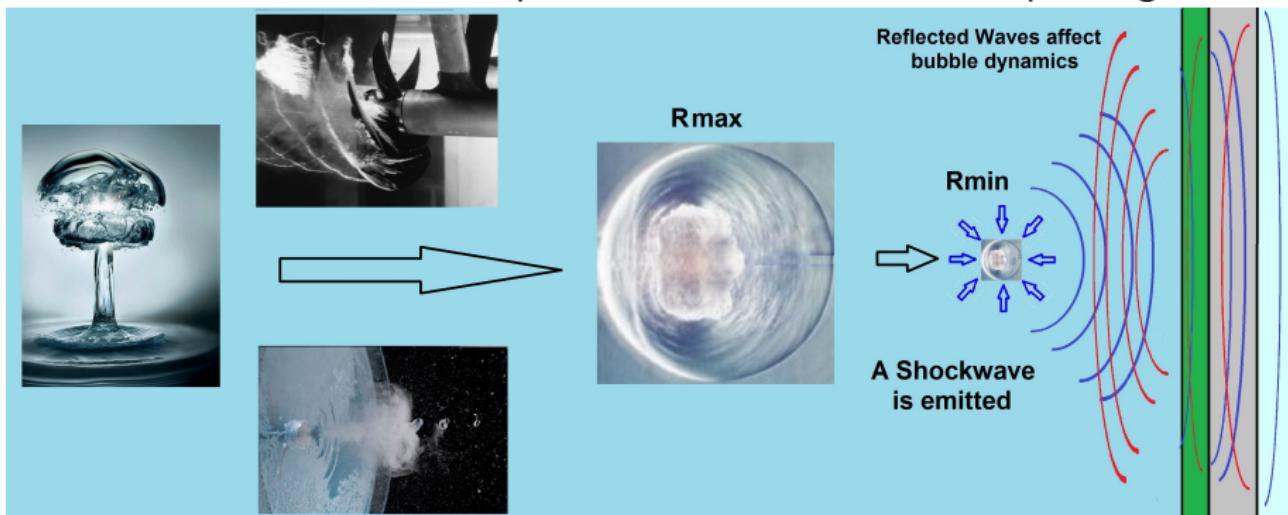
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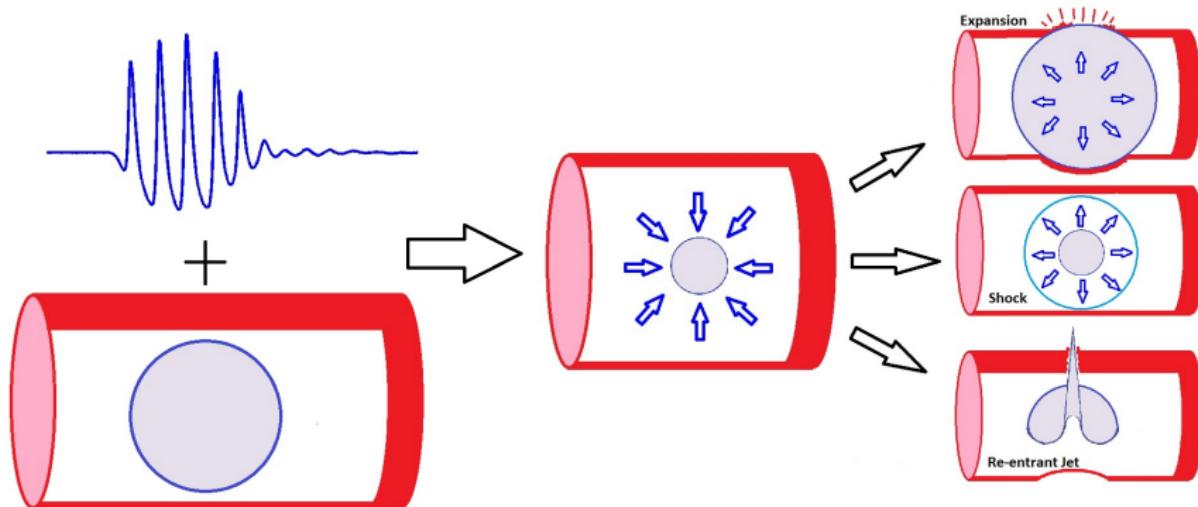
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I kept this slide because it shows how to imbed a video into the slide. I recommend mp4 because it works on most platforms.

- bullet 1
- bullet 2
- bullet etc...

(Loading Video...)

To organize this page, I used the minipage environment, it's handy for slides.

- Here, talk about the pictures and stuff
- That pictures of a bloody kidney
- You can put whatever picture you want there.



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The Keller-Miksis Equation

$$\left(1 - \frac{\dot{R}}{Ma}\right) R \ddot{R} + \frac{3}{2} \left(1 - \frac{\dot{R}}{3Ma}\right) \dot{R}^2 = \frac{R}{Ma} \left(\left(1 + \frac{2}{We}\right) \frac{3\gamma}{R^{3\gamma+1}} \dot{R} + \frac{2\dot{R}}{WeR^2} + \dot{\tau}_{RR} \right)$$

$$+ \left(1 + \frac{\dot{R}}{Ma}\right) \left[\left(1 + \frac{2}{We}\right) \frac{1}{R^{3\gamma}} - \frac{2}{WeR} + \tau_{RR} - 1 - p_a(t) - \frac{R}{Ma} \dot{p}_a \right]$$

Kelvin-Voigt model for stress, $\tau_{vv}(R)$:

$$\tau_{vv} = -\frac{A}{3C_0} \left(1 - \frac{1}{R^2}\right) - \frac{4}{R^2} \left(\frac{\dot{R}}{R}\right)$$

Parameters	Dimensional	Dimensionless
Elasticity	$C = 5, 10, 1000 \text{ (MPa)}$	$C = C'/C = 20, 1, 0.1$
Initial Radius	$R(0) = 0.1 - 2 \text{ (\mu m)}$	
Adiabatic Index		$\gamma = 1.13, 1.4$

$$R_0 = 1 \text{ \mu m}, \sigma = \sqrt{\rho_m/p}, We = \rho R_0 c^2/g, Re = \rho R_0 c/\mu, Ca = c^2/\mu/C, Ma = a/c$$

(??)

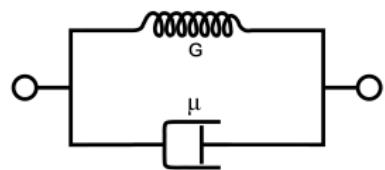
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Kelvin-Voigt model for stress, $\tau_{rr}(R)$.

$$\tau_{rr} = -\frac{4}{3Ca} \left(1 - \frac{1}{R^3}\right) - \frac{4}{Re} \left(\frac{\dot{R}}{R}\right)$$



Parameter	Dimensional	Dimensionless
Elasticity	$G = 5, 10, 1000 \text{ (MPa)}$	$\bar{G} = G/c = 20, 1, 0.2$
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(??)

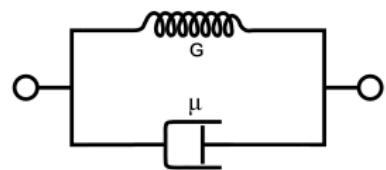
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Parameter:	Dimensional	Dimensionless
Elasticity	$G = 5, 100, 1000 \text{ (kPa)}$	$\mapsto Ca = c^2 \rho / G = 20, 1, 0.1$
Initial Radius	$R(0) = 0.1 - 2 \text{ (\mu m)}$	
Adiabatic Index		$\gamma = 1.13, 1.4$

$$R_0 = 1 \text{ \mu m}, c = \sqrt{p_{atm}/\rho}, We = \rho R_0 c^2 / s, Re = \rho R_0 c / \mu, Ca = c^2 \rho / G, Ma = c_0 / c$$

(??)

- **\LaTeX{} is sweet**
 - I've been recycling this presentation script since undergrad.
- If you want to learn more about \LaTeX{}, there's tons of info online.
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Thanks a lot!

Questions?