

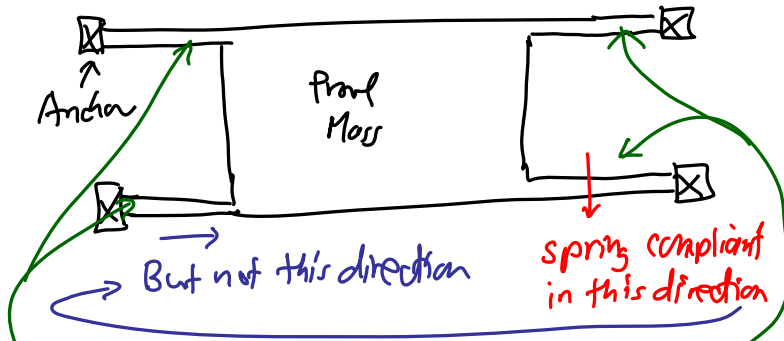
Lecture 5w: Process Modules I

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• Announcements:

• Flaw in HW#1, Problem 2

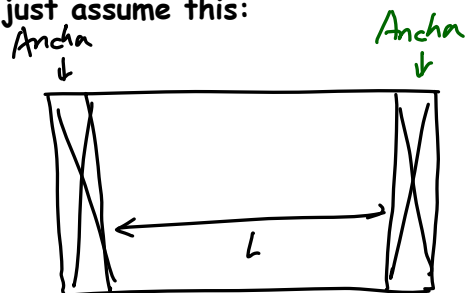
↳ The springs in the accelerometer need to be taken into account to do this problem right:



↳ To do this problem right, the compressive forces from these springs generated by thermal expansion must be taken into account

↳ This is too advanced a topic for you right now

↳ So just assume this:



• One person asked to change the discussion time

↳ Any others want this?

• Today:

• Reading: Senturia, Chapter 1

• Lecture Topics:

↳ Benefits of Miniaturization

↳ Examples

– GHz micromechanical resonators

– Chip-scale atomic clock

– Thermal Circuits

– Micro gas chromatograph

• Senturia, Chpt. 3; Jaeger, Chpt. 2, 3, 6

↳ Example MEMS fabrication processes

↳ Oxidation

↳ Film Deposition

– Evaporation

– Sputter deposition

– Chemical vapor deposition (CVD)

– Plasma enhanced chemical vapor deposition (PECVD)

– Epitaxy

– Atomic layer deposition (ALD)

– Electroplating

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• Last Time:

• Going through the Micro Gas Analyzer section of Module 2 ...

• ... continue with this

• Then start going through Module 3 on Oxidation and Film Deposition