Physics & Astronomy Alumni Panel

Dr. Meredith Dyck '98
Chief Strategist for Microelectronics, National Security Agency

Meg Mullin '17
Vice President, Fixed Income Syndicate Trader, Wellington Management

Dr. Matt Paoletti '05
Senior Staff Systems Engineer, Northrop Grumman

Register on Handshake

Thursday, February 26
7 - 9 p.m.
Hildreth-Mirza Humanities Center, Great Room

Hear from a group of Bucknell alumni as they share their career paths, advice and real-world perspectives. Join us for the conversation — light refreshments provided.

Bucknell UNIVERSITY | Center for Career Advancement

Physics & Astronomy Speaker Series

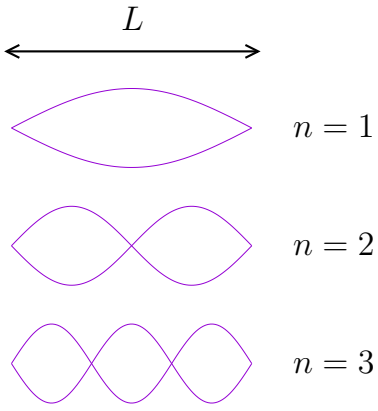
Dr. Matthew Paoletti ‘05

Quantum Turbulence You Can See: Experiments in Superfluid Helium

Lecture 10 — Concept Test 1

What is the wavelength of the $n = 3$ mode in this case?

1. $L/3$
2. $L/2$
3. L
4. $2L/3$
5. $3L/2$
6. $3L$



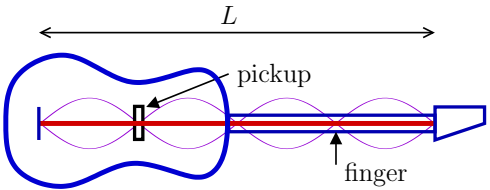
Lecture 10 — Concept Test 2

When I play the "A" string on my guitar, it produces sound with a frequency of 110 Hz. If I now pluck the D string, I hear a higher frequency note. Why?

1. The wave on the D string travels slower
2. The wave on the D string travels faster
3. The wave on the D string has a longer wavelength
4. The wave on the D string has a shorter wavelength
5. The sound of the D string travels slower through the air
6. The sound of the D string travels faster through the air

Lecture 10 — Concept Test 3

A guitar string is plucked with a finger touching the string a distance $L/4$ from the end. What sound do you hear if the electric "pickup" is located a distance $L/4$ from the opposite end of the string?



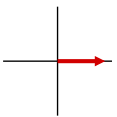
1. The frequency corresponding to the $n = 3$ mode
2. The frequency corresponding to the $n = 4$ mode
3. Almost no sound
4. Screeching feedback, similar to sounds Jimi Hendrix created

Lecture 10 — Concept Test 4

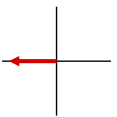
At a certain time an oscillator is described as

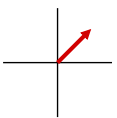
$$x = 6\cos\left(\frac{3\pi}{4}\right)$$

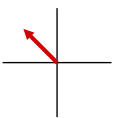
Which of the following phasors best represents the oscillator at this position and time?

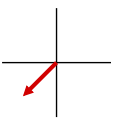
1. 

3. 

5. 

2. 

4. 

6. 

Lecture 10 — Concept Test 5

Below is a graph of the oscillation $x(t) = A\cos(\omega t + \phi_0)$. Which of the labeled times corresponds to the phasor diagram shown at right?