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Courses » Fundamentals of Acoustics

Announcements **Course** Forum Progress Mentor

Unit 8 - Week 07: Spherical waves and interference ✎

Course outline

How to access the portal?

Week 01:
Introduction and Terminology

Week 02:
Concept Review

Week 03:
Wave equation

Week 04:
Transmission line equations

Week 05: 1-D Waves

Week 06:
Power and spherical waves

Week 07:
Spherical waves and interference

Week 7 Assignment ✎

The due date for submitting this assignment has passed.

Due on 2017-03-14, 23:59 IST.

Submitted assignment

1) Sound travels as _____ in air. **1 point**

- Longitudinal wave
- Transverse wave
- Rayleigh wave
- Electro magnetic waves

2) _____ is the graphical representation of a sound source emission as a function of direction in a specified plane and at a specified frequency. **1 point**

- Directivity pattern
- Beam pattern
- Directivity factor
- None of the above

3) Directivity patterns for different sound sources are shown in figure below. For which pattern, SPL is minimum at $\theta = \pi$? **1 point**

- Lesson 1: Interference of sound sources- part I
- Lesson 2: Interference of sound sources- part II
- Lesson 3: Interference of sound sources- part III
- Lesson 4: Interference of sound sources- part IV
- Lesson 5: Directivity
- Lesson 6: Complex power, pressure and velocity for a spherical source
- Quiz : Week 7 Assignment
- Week 7 Assignment solution

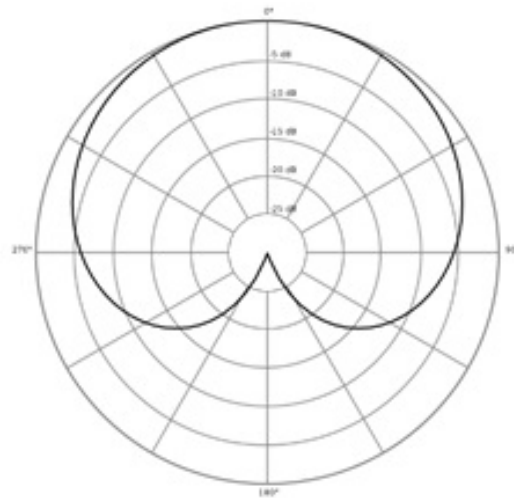
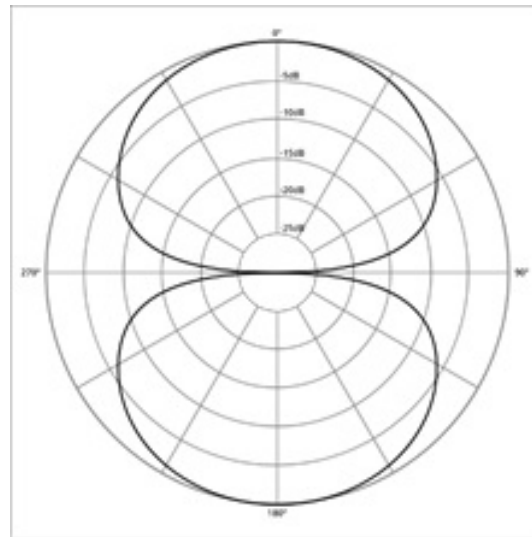
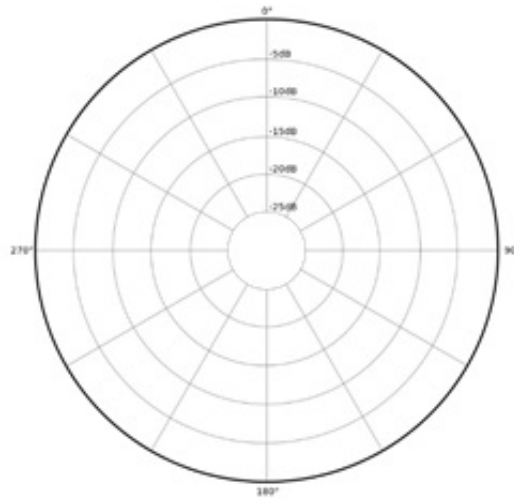
**Week 08:
Directivity
and mufflers**

**Week 09:
Sound in
rooms**

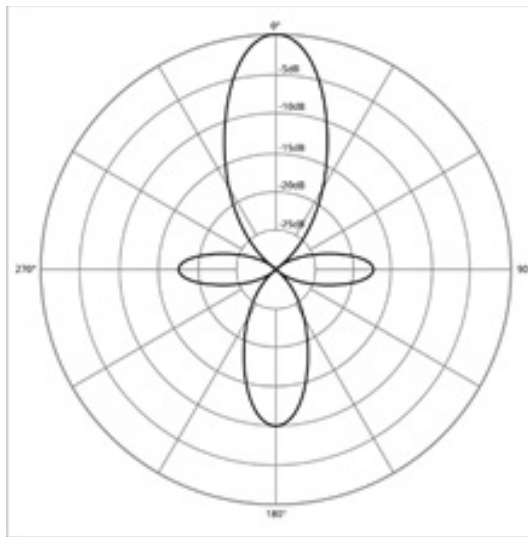
**Week 10:
Reverb time
and FFT**

**Week 11:
Weighting
and loudness**

Week 12:



Miscellaneous
topics and
closure



4) For planar acoustic waves, the phase difference between pressure and particle velocity at a point is _____. **1 point**

- 90 degrees
- 0 degree
- 90 degrees
- 180 degrees

5) Spherical waves behave as planar waves when the distance of the wave front from the source is _____. **1 point**

- zero
- $\lambda/2\pi$ (where λ is the wavelength)
- Tends to infinity
- None of the options are correct

6) Directivity pattern of a monopole is _____ for all combinations of planes and frequencies. **1 point**

- Circle
- Square
- Ellipse
- Parabola

7) The term beam width corresponds to the angle over which the SPL level for a fixed radius of a sound source drops by _____. **1 point**

- 2 dB
- 4 dB
- 6 dB
- 8 dB


8) For a spherical sound source the cyclic term of complex power diminishes if radius of sphere is _____. **1 point**

- Greater than 1/6th of the wavelength of sound
- Less than 1/6th of the wavelength of sound
- Equal to 1/8th of the wavelength of sound

None of the above

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