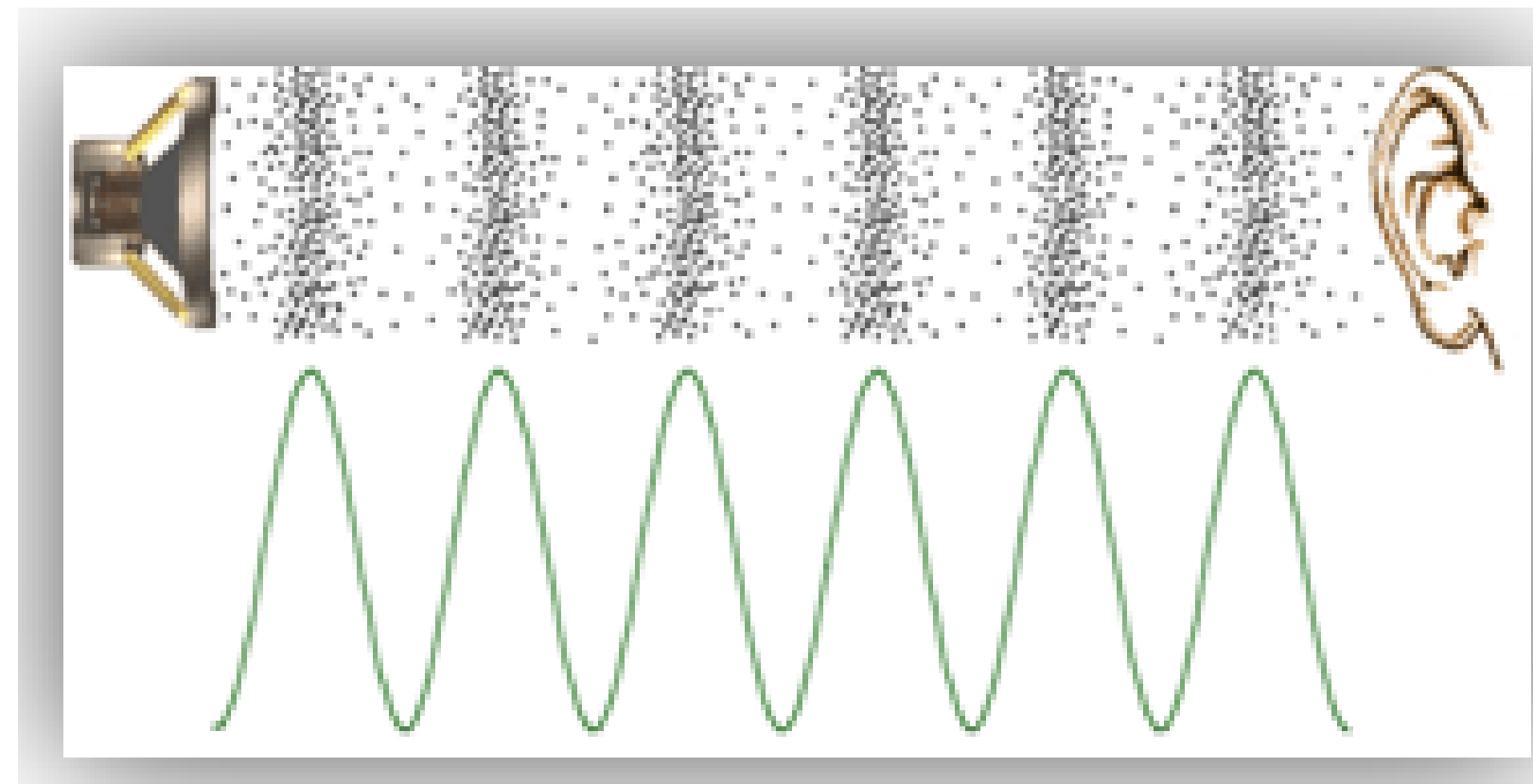




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BASICS OF SOUND

Sound = vibration of air



Sound pressure level:

measured at a distance from a source

Decibels (dB) = unit of measure (logarithmic)

Weighting:

A-weighting (dBA) used to represent human ear response

Decibel "addition":

40 dBA + 40 dBA = 43 dBA



Sound Level Modeling

- ISO 9613-2
- CadnaA
- Conservative assumptions

SOUND FROM DATA CENTERS

Primary equipment:

- chillers
- power generators
- electric transformers

Sound Study

1. Measure existing sound levels
2. Predict levels from the data center
3. Mitigation methods: alternative equipment, sound barrier walls, equipment mitigation (silencers, louvers, etc.)

