Challenges of Acoustics

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David Josephson
Josephson Engineering, Inc.
Santa Cruz, California
Why are aircraft noisy?

- Actual noise – physics and physiology
- Subjective response - “virtual noise”
Long-term Annoyance

What can we measure?

- Sound pressure – physics
- Loudness – physiology
Loudness

• not subjective
• depends on frequency
• depends on time structure
Partial Loudness

- depends on background masking
- measure background spectrum
- calculate loudness in each ERB
- predict detectability radius
If you can’t measure it, you can’t improve it

Be sure to measure what you want to improve