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Speech levels in open offices

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Speech Levels in Open Offices

Alf Warnock & W.T. Chu

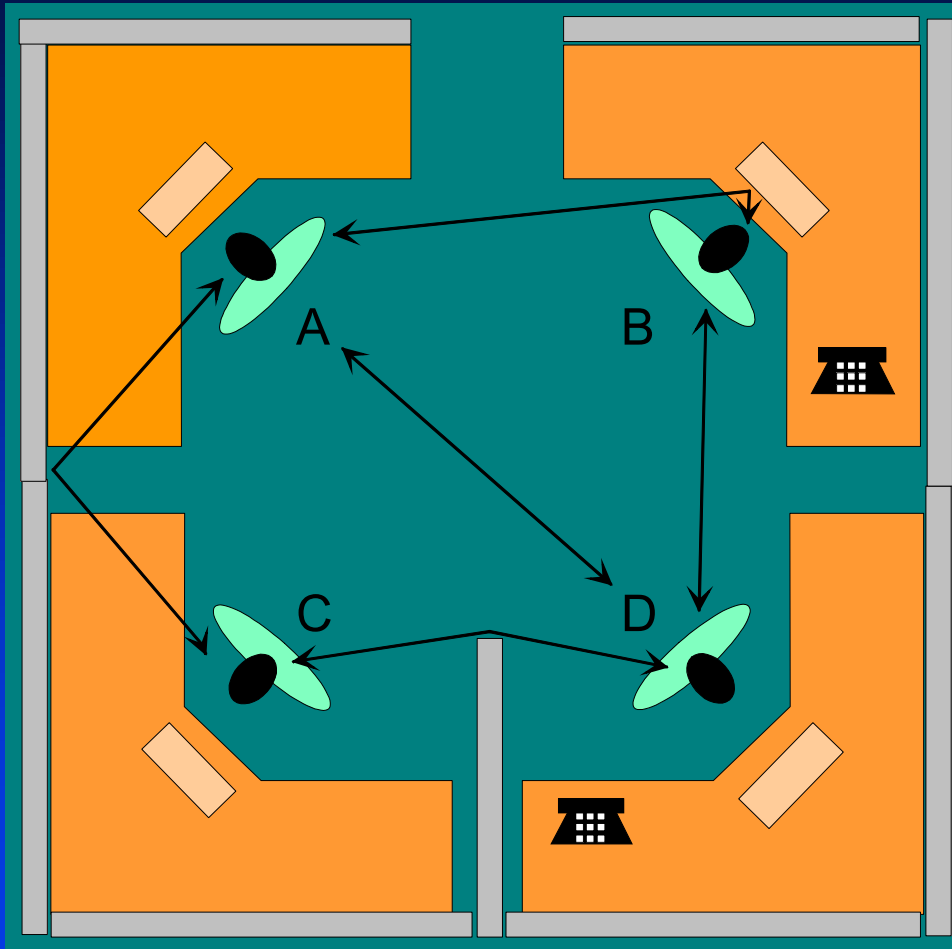
Indoor Environment Program, Acoustics

Institute for Research in Construction

National Research Council

Ottawa, Ontario

Project: Team style open offices



- Can some degree of speech privacy be attained?
- Need typical levels to make calculations

Team-style areas - real



Previous Work

- Pearsons, Bennet & Fidell
 - Different voice efforts measured but none in open office
- McKendree
 - Anechoic room
- No information on speech levels measured in open offices

Recording Voice Levels



Sites and subjects

- Nine offices - mix of team- and cubicle-style
- 118 subjects, 53 male, 65 female
- Also measured attenuations between work stations

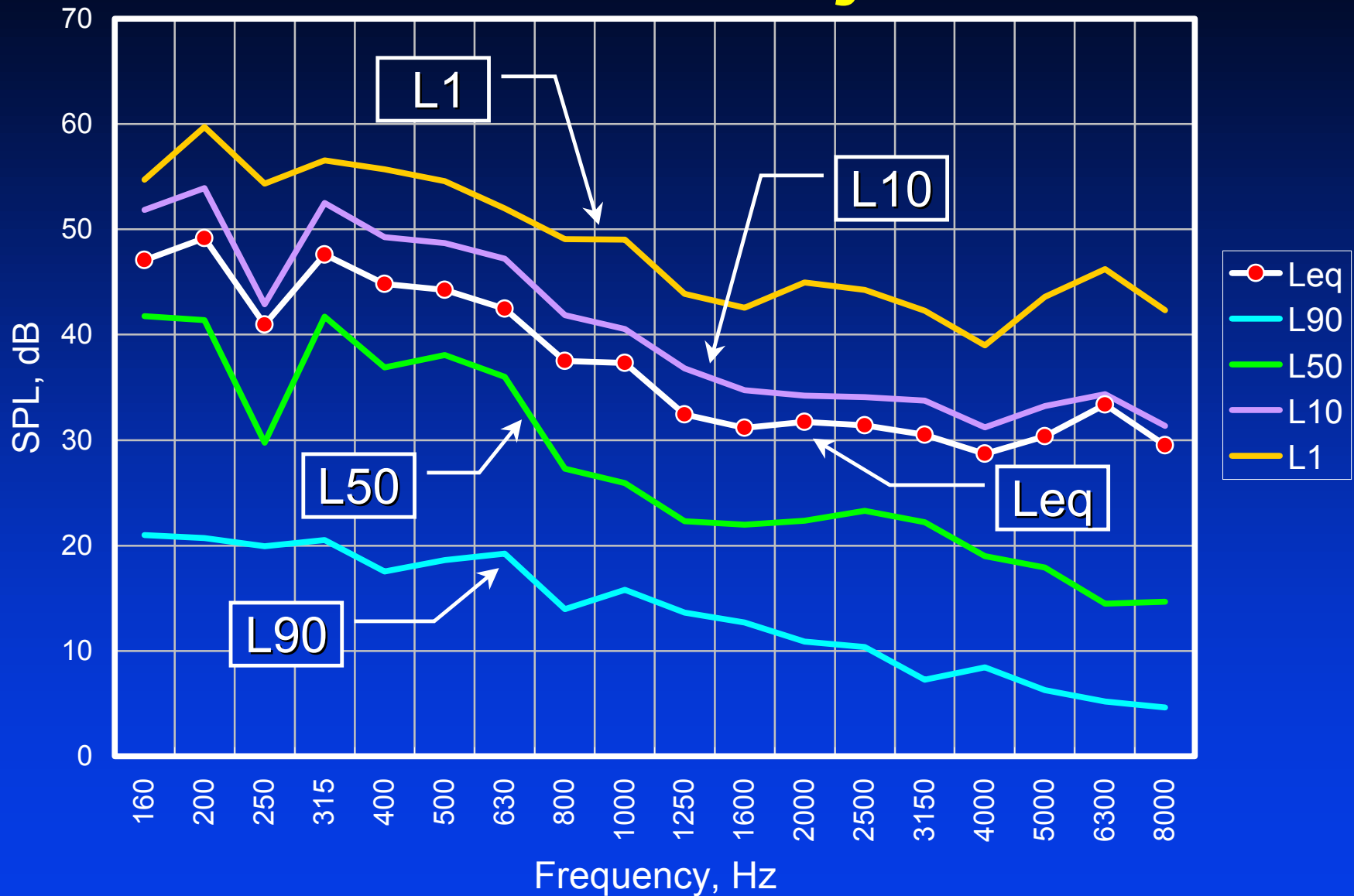
Analysis

- 30 second segments with no prolonged silences.
- 1/16 second integration time - 480 spectra
- Levels corrected to distance of 0.9 m by measurements in an anechoic chamber

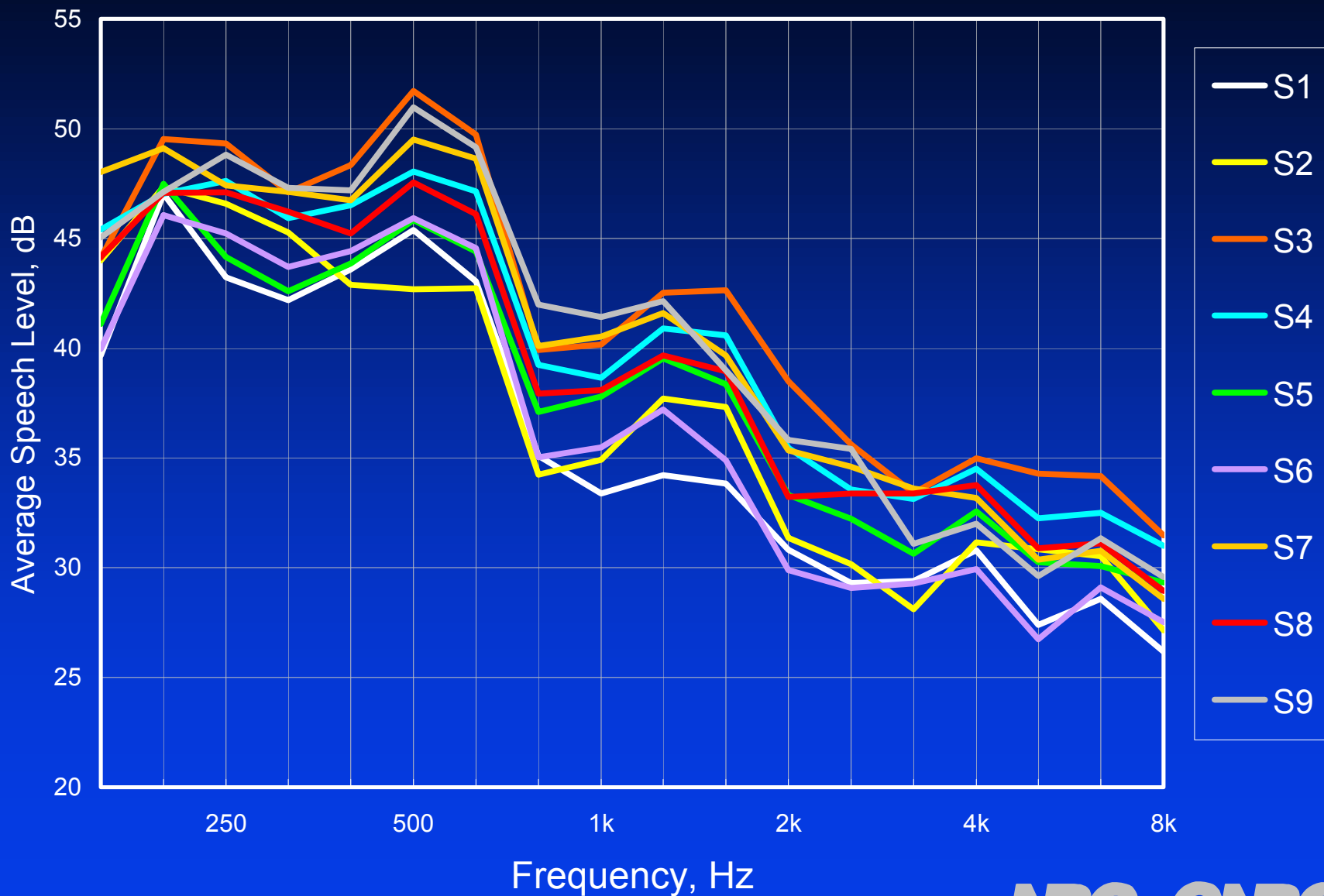
Attenuation



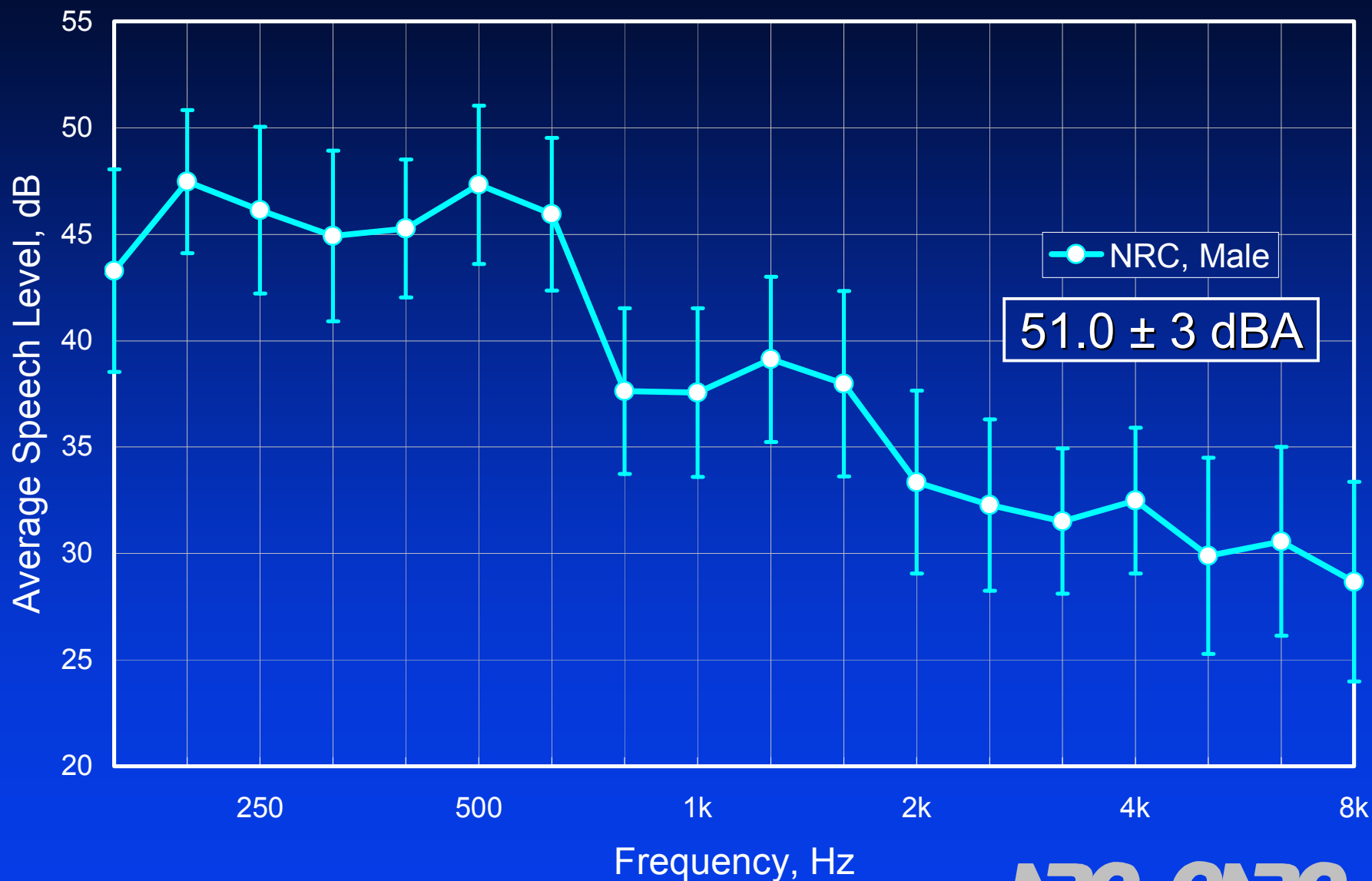
Result for one subject



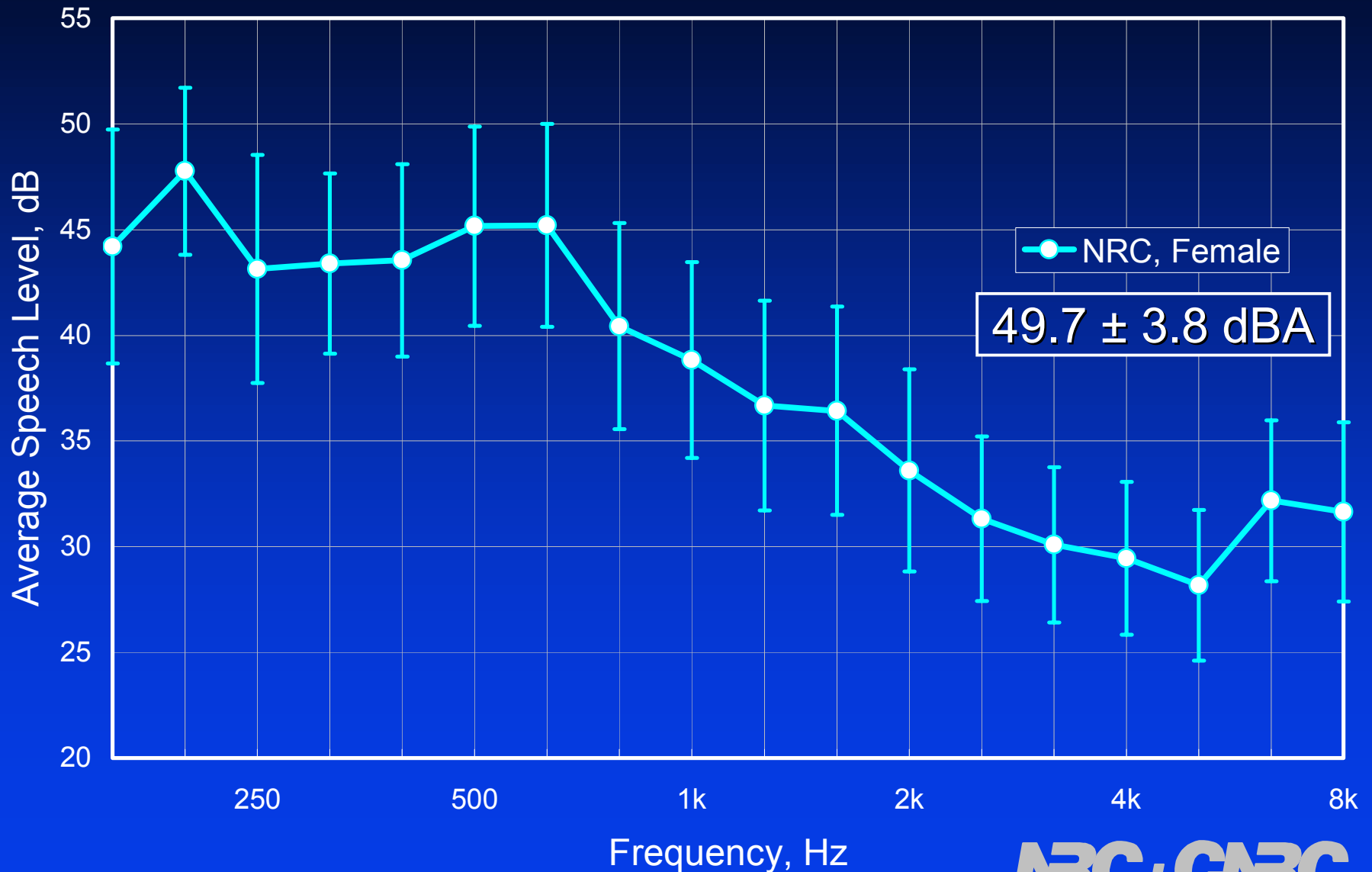
Average for each office - Males



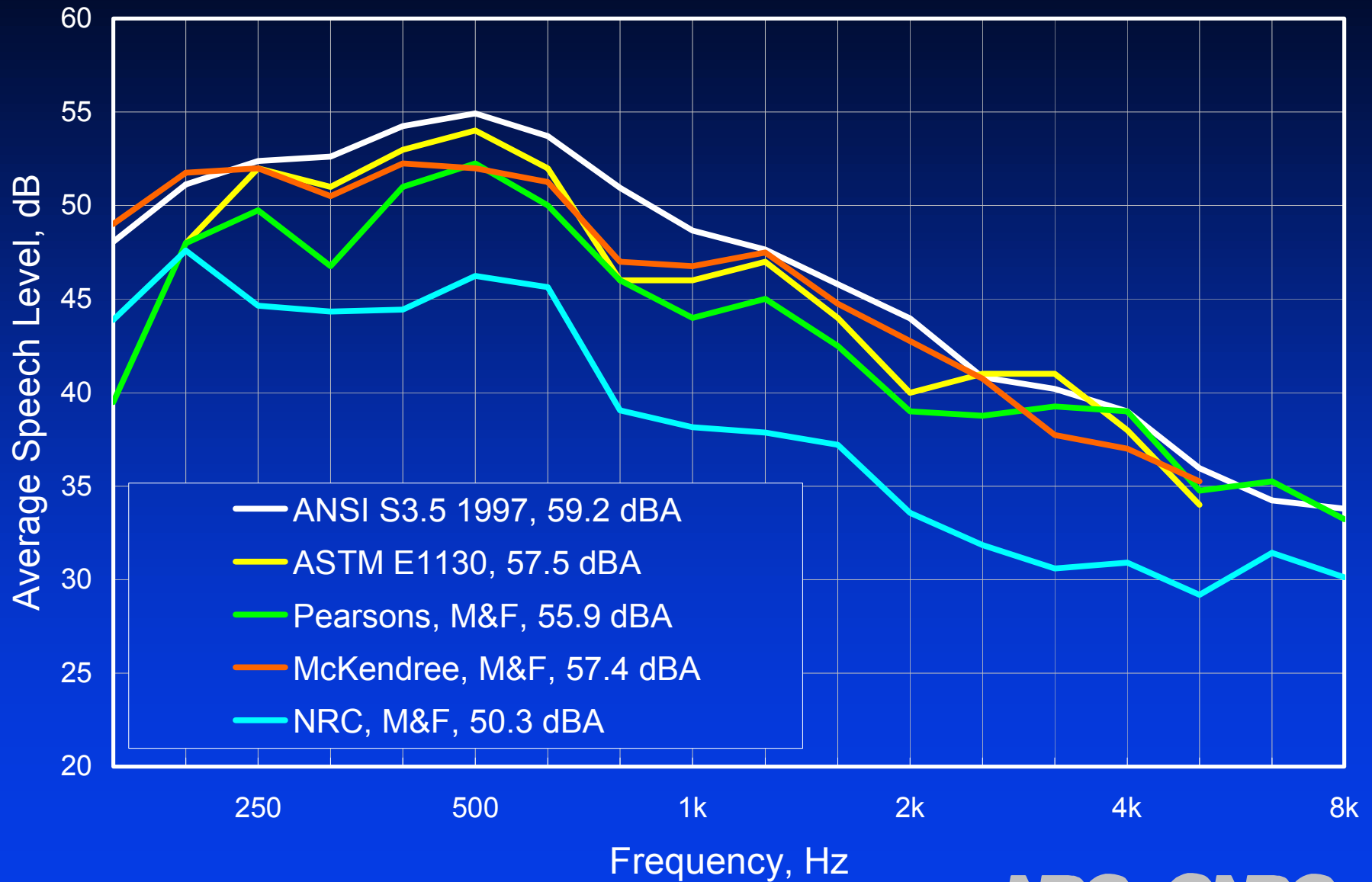
Grand Average - Males



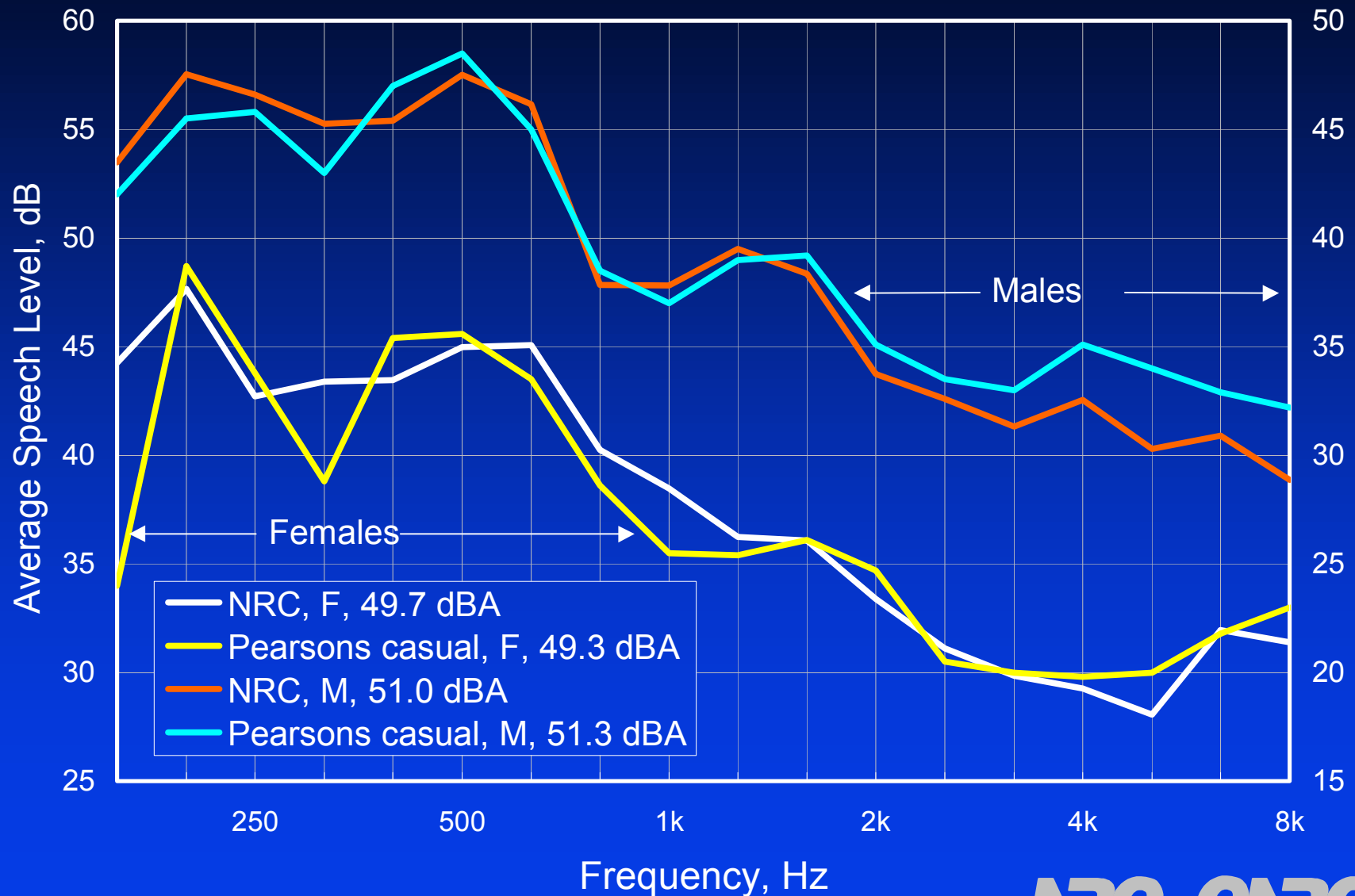
Grand Average - Females



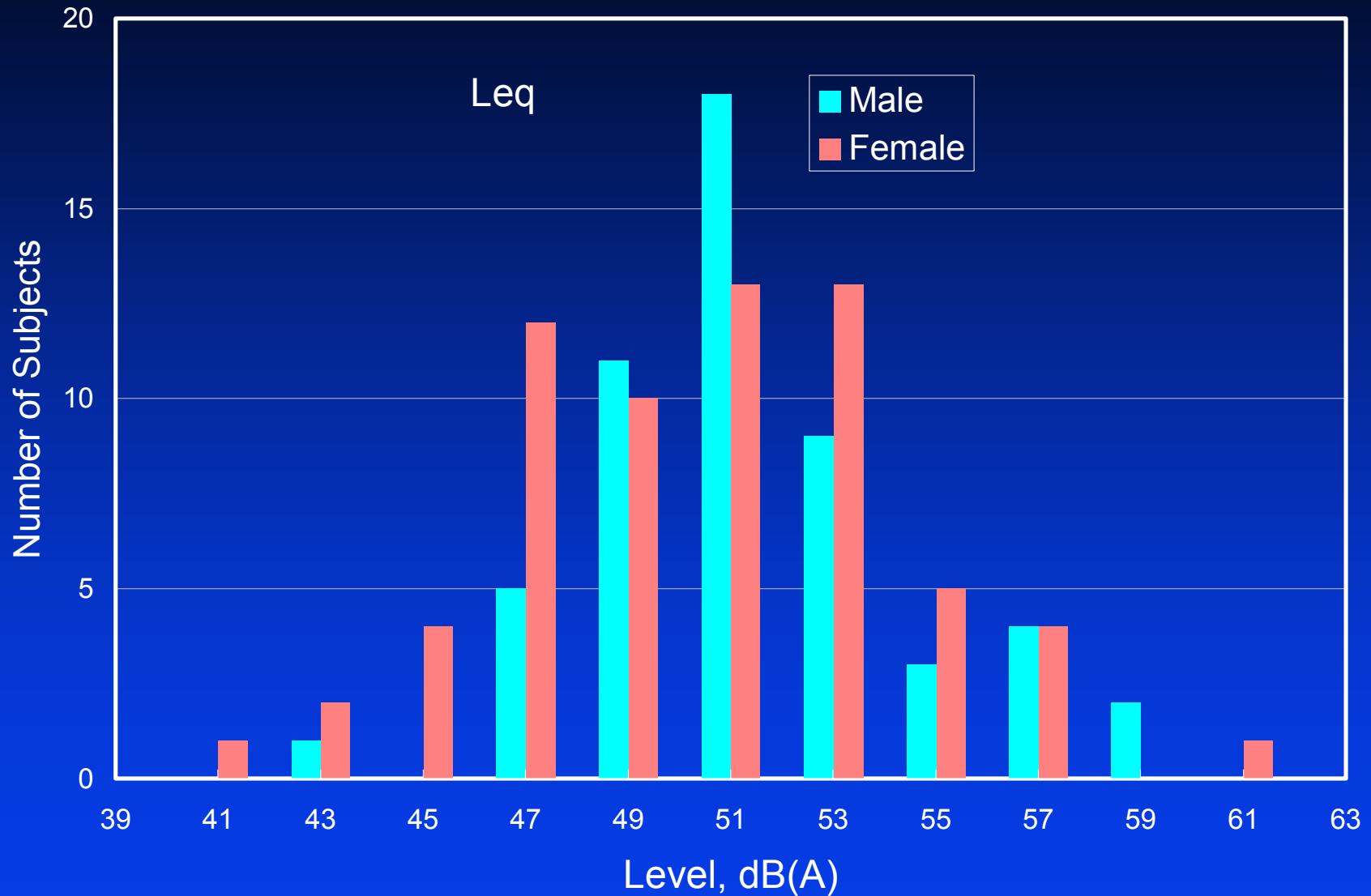
Voice Spectra



Casual vs. Open Office



Average Voice Levels



SII and voice level

