Individual Field Fit Testing of Hearing Protectors: A Field-MIRE Approach

**BACKGROUND**

**CURRENT HEARING PROTECTION DEVICES (HPD) TESTING SCENARIO**
- Current evaluations of HPDs are inaccurate for individual users
  - Managed by statistical manipulation of idealized laboratory data
- New approach needed!

**CURRENT TEST PROTOCOL NOT VIABLE FOR BROAD FIELD USE**
- Based on Real Ear Attenuation at Threshold (REAT)
- Subjective
- Time consuming
- New approach needed!

**CURRENT THRESHOLD HPD FIELD TESTING METHODS**

**TYPICAL APPLICATIONS (...continued)**
- Field-MIRE for disposable HPDs

**VALIDATION**

**CONCLUSION**
- The proposed Field-MIRE is a valid alternative to statistical manipulation of population-based hearing protector performance estimates and yield values comparable to "gold standard" REAT testing. The P-PAR is computationally similar to the Noise Reduction Rating (NRR), but it is:
  - Obtained via objective measurement rather than relying on user response to stimulus
  - Measured on individual combinations of user and HPD rather than applying data from sample populations
  - Assessed under realistic use conditions rather than idealized laboratory settings

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**REFERENCES**

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