The Cocktail Party Problem

Objective 1: Parsimonious use of covariates
Objective 2: High temporal resolution
Objective 3: Scalability

Existing Techniques:
- Full spectrotemporal features as covariates
- High-pass filters (e.g., 100 Hz)

Our Contribution:
- Low temporal resolution (~100 ms)
- Convex, but highly non-linear and coupled in time
- Efficient solution: two nested EM algorithms

Simulation Results

Application to Real Data

References

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A State-Space Model for Decoding Auditory Attentional Modulation from MEG in a Competing-Speaker Environment

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