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# Introduction

## Application scenarios

## Literature review

### Existing Algorithms

#### Source localisation

##### Cross-correlation

###### GCC-PHAT

#### Source tracking

##### Kalman Filters

##### Particle filters

##### Recursive Expectation-Maximization

###### TREM

###### CREM

## Research problem

## Constraints

# Theoretical Background

## Simulation of room acoustics

## Sparseness

## Pair-wise relative phase ratio

## Gaussian Mixture Model (GMM)

## Expectation-Maximization (EM)

# Methodology and Implementation Details

## Simulation Framework

### Room environment

### Room impulse responses

#### Static sources

#### Moving sources

## Location Estimation

## Source Tracking

### TREM

### CREM

## Evaluation Scenarios

### Variable parameters

### Static scenarios

### Dynamic scenarios

# Results

## Source localisation in a static environment

## Source tracking in a dynamic environment

## Critical Review

# Conclusion

## Summary of findings

## Further Research