



Technical barriers/problems:

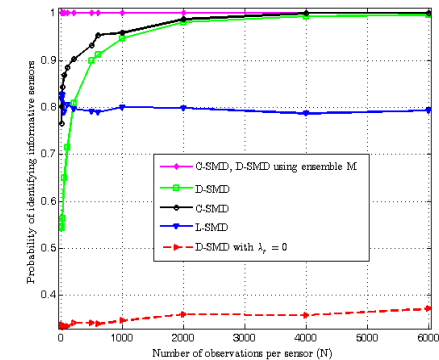
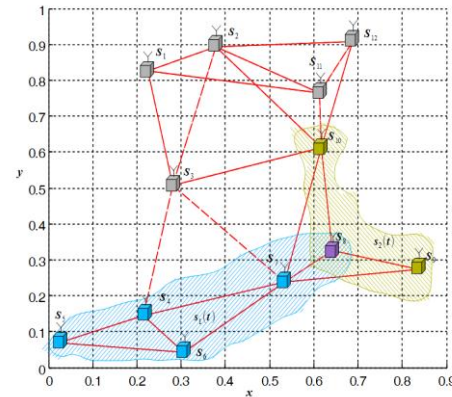
- Utilize sensor networks to locate threats
- Develop distributed algorithms
- Limited power resources in sensors
- Threats unpredictable both spatially and temporally

Objectives:

- Covariance factorization techniques
- Sparsity-aware information processing
- Block-coordinate descent optimization

Accomplishments:

- Superior identification performance compared to existing alternatives
- Probability of detecting threats increases
- 1 Journal publication (in preparation)
- 1 Conference paper
- 1 M.S. working on it; Collaboration with UTK



(II) Performance assessment of our approach (black and magenta curves)



Technical barriers/problems :

- Compress data while removing noise
- Exploit structuring in the data (sparsity)
- Probabilistic data models not available
- Noise has unknown characteristics

Objectives :

- Principal component analysis
- Norm-one regularization
- Block-coordinate descent optimization

Accomplishments:

- Novel compression and denoising approach
- Improved data reconstruction quality
- 1 Journal publication (to appear)

