Journal Watch
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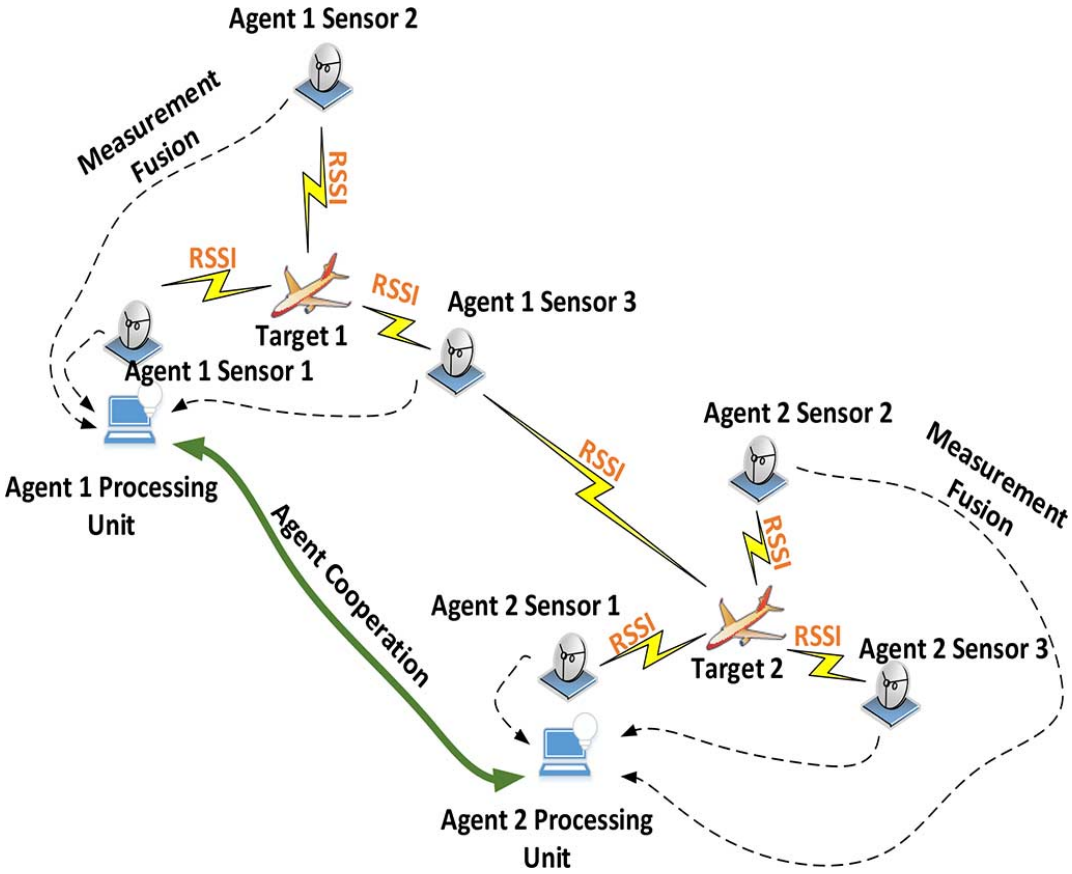
SPC Lab, IISc

RSSI-Based Multi-Target Tracking by Cooperative Agents Using Fusion of Cross-Target Information

Jonathan P. Beaudeau,Mónica F. Bugallo, and Petar M. Djurić



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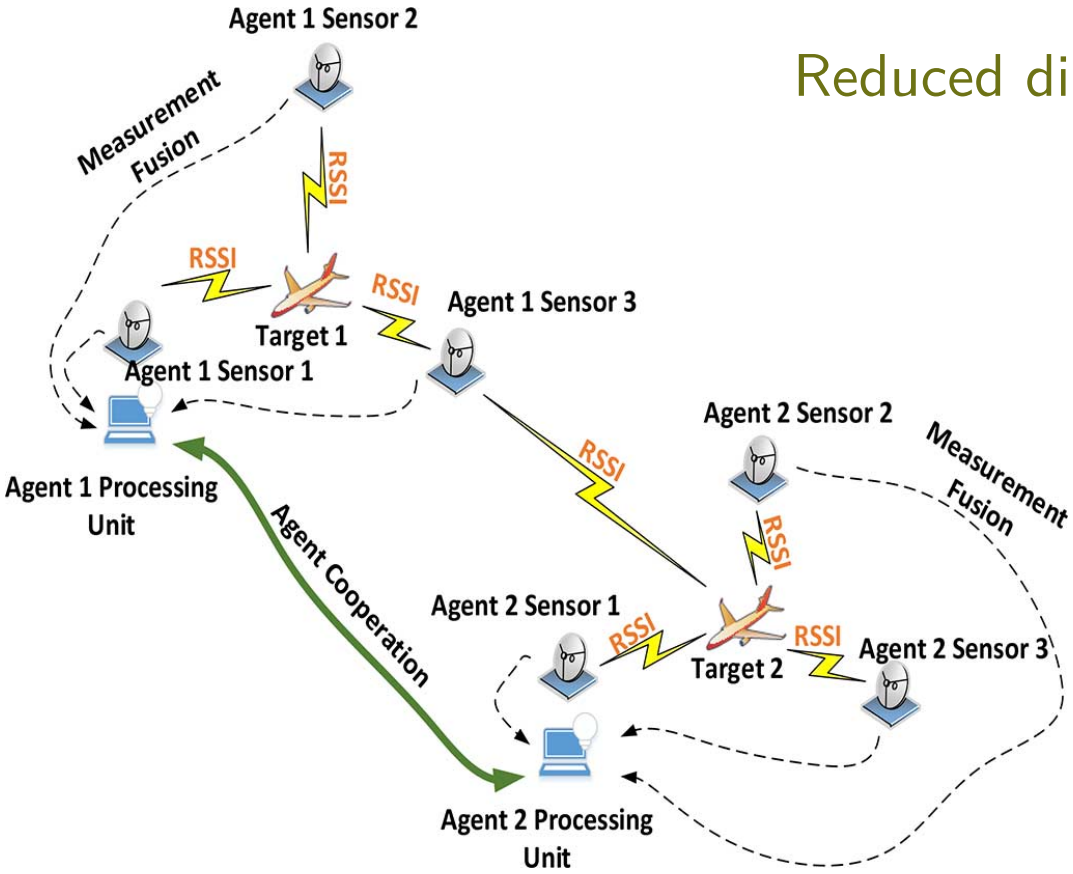

Reduced dimensionality

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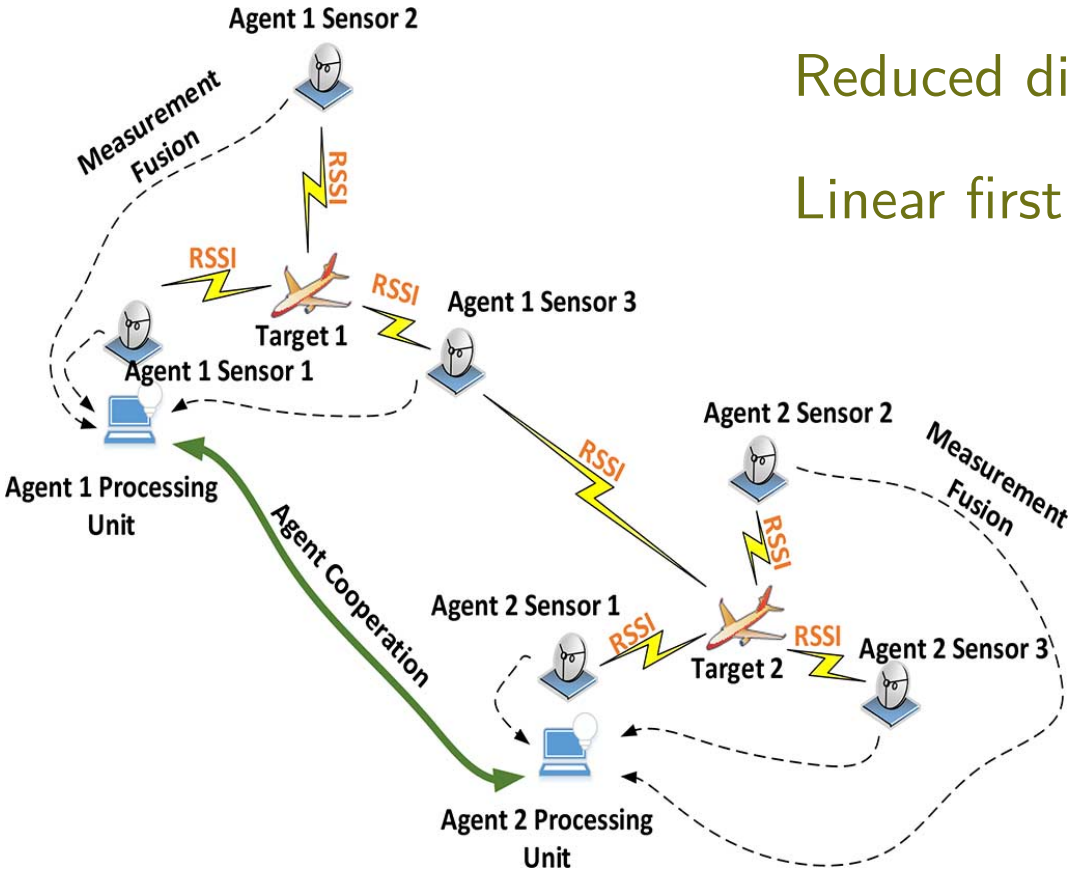

Reduced dimensionality

Linear first order state evolution model

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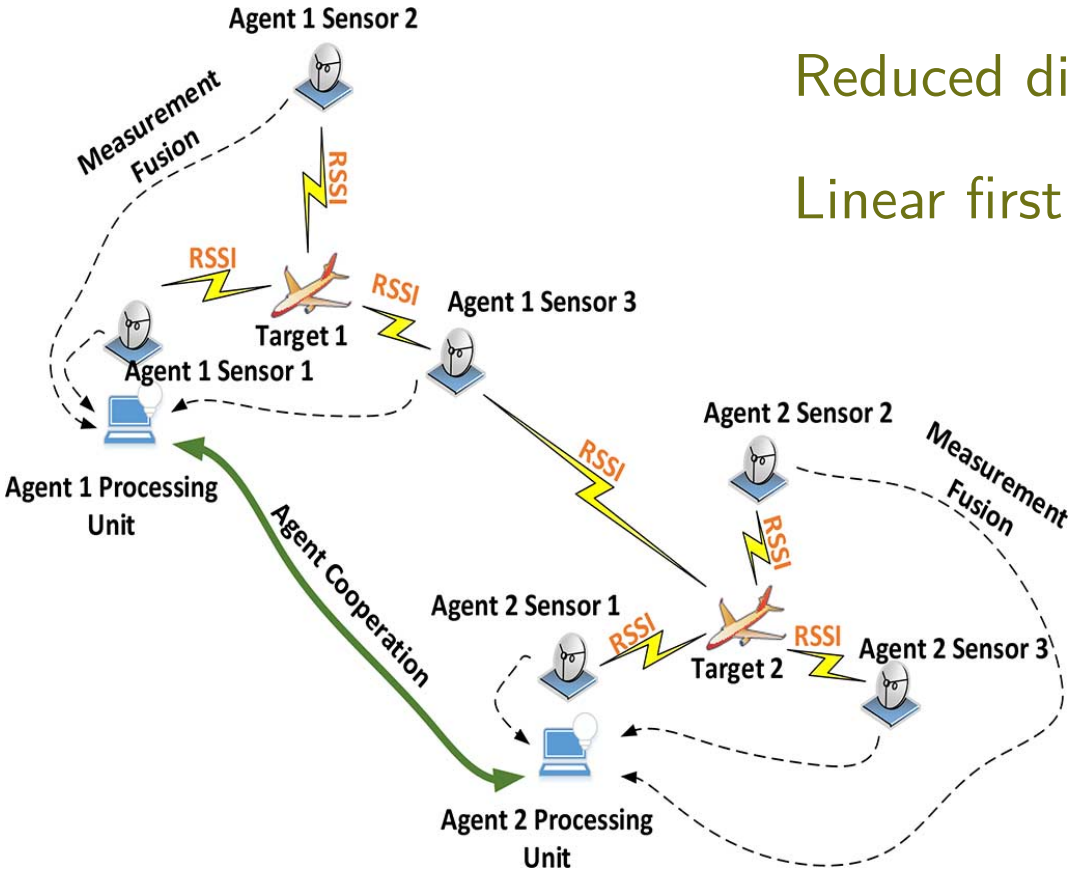


Reduced dimensionality

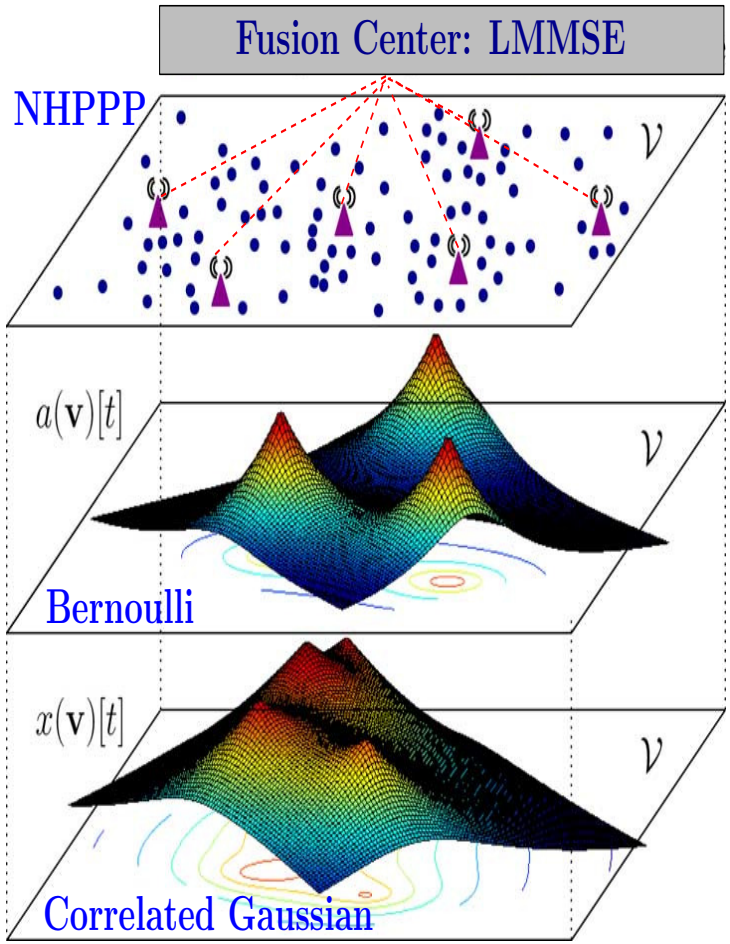
Linear first order state evolution model

Particle filter

Unscented Kalman filter

Optimized Random Deployment of Energy Harvesting Sensors for Field Reconstruction in Analog and Digital Forwarding Systems

Teng-Cheng Hsu,Y.-W. Peter Hong, and Tsang-Yi Wang



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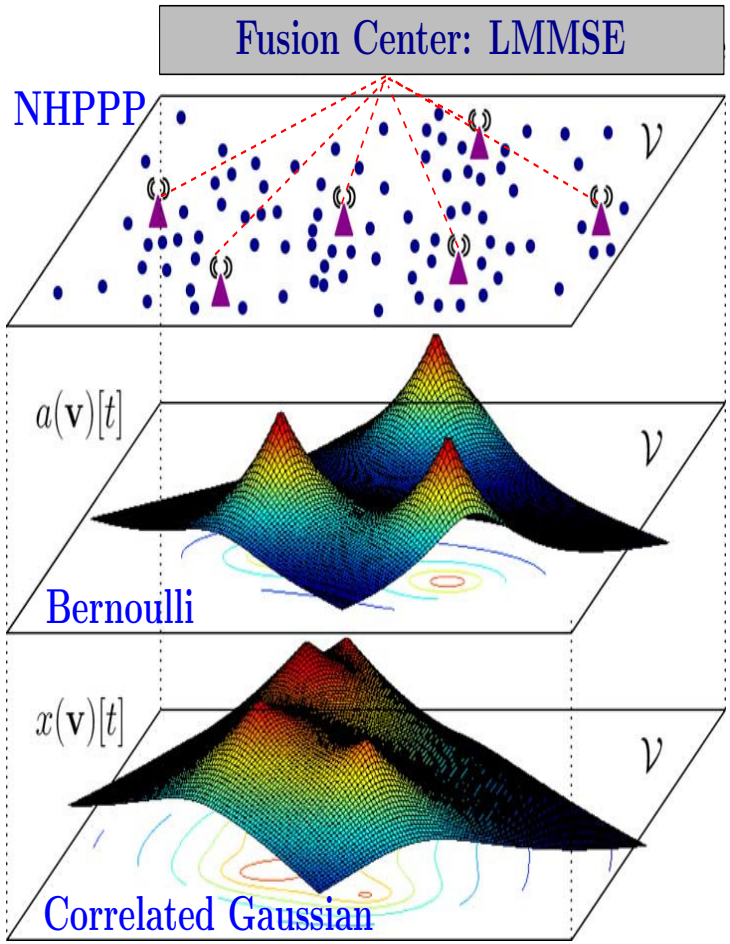

Optimal sensor densities and the energy thresholds for field partition

Minimize MSE upper bound with a constraint on mean number of sensors

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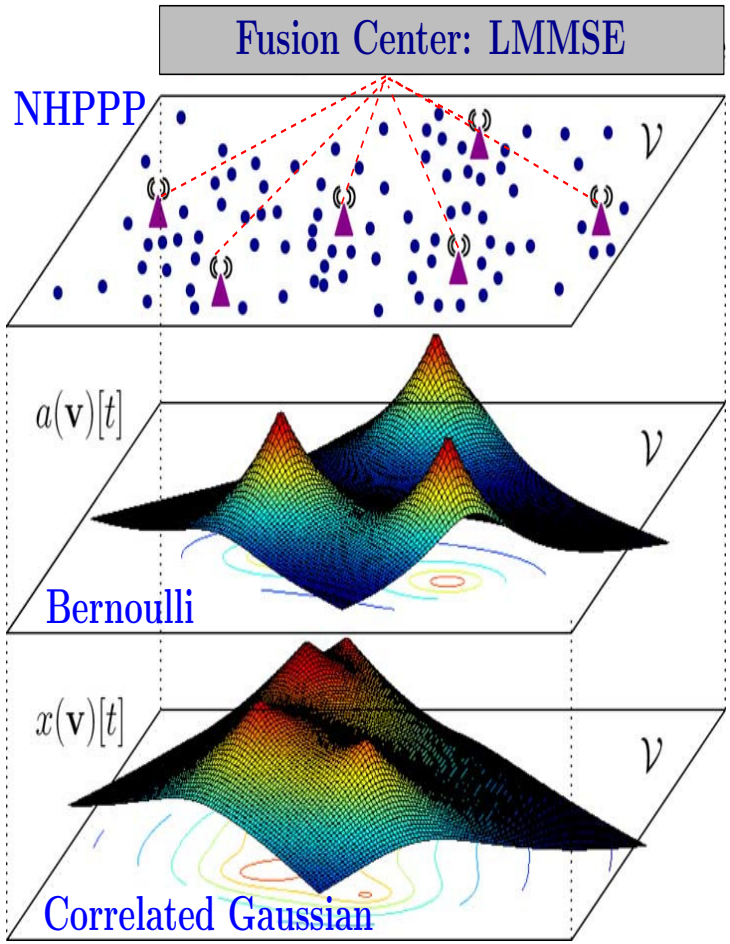


Optimal sensor densities and the energy thresholds for field partition

Minimize MSE upper bound with a constraint on mean number of sensors

Analog Forwarding:

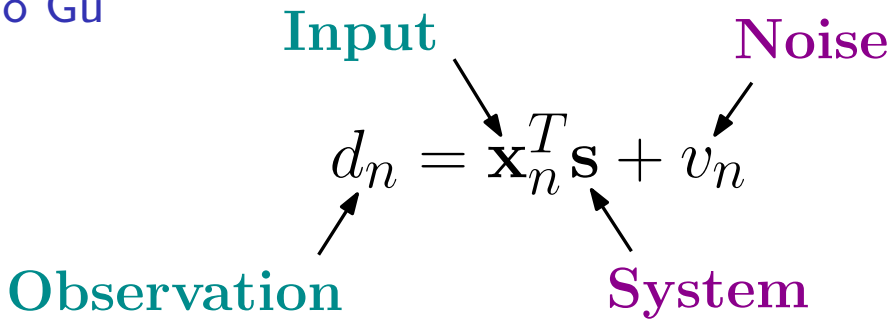
Condensation method for solving GP

Digital Forwarding:

Alternating optimization algorithm

Block-Sparsity-Induced Adaptive Filter for Multi-Clustering System Identification

Shuyang Jiang and Yuantao Gu



Sparsity model: Simplified Ising model

Block-Sparsity-Induced Adaptive Filter for Multi-Clustering System Identification

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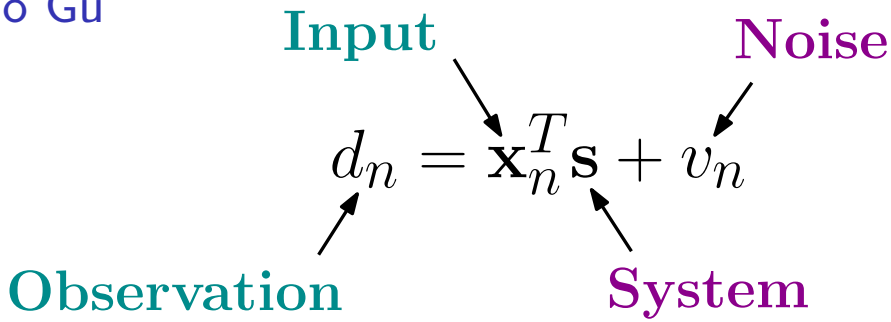

Sparsity model: Simplified Ising model

Min. **mean estimated error** $+$ $l_{0,2}$ **of unknown vector**

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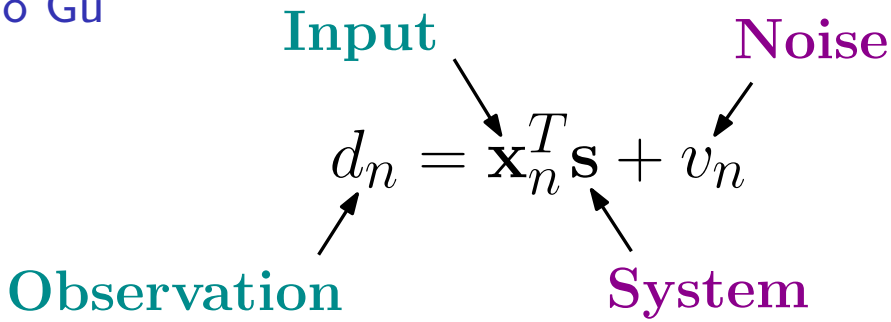

Sparsity model: Simplified Ising model

Min. **mean estimated error** + $l_{0,2}$ **of unknown vector**

Analysis under Gaussian assumption:

- Steady-State Performance
- Optimal Group Partition Size
- Faster convergence than l_0-LMS

Orthogonal Matching Pursuit With Thresholding and its Application in Compressive Sensing

Mingrui Yang, and Frank de Hoog

$$f = \phi a, \ \|a\|_0 = k$$

Initialization: $r_0 := f$, $x_0 := 0$, $\Lambda_0 := \emptyset$, $s := 0$.

while $\|r_s\|_2 > t\|f\|_2$ **do**

Find an index i such that

$$|\langle r_s, \phi_i \rangle| \geq t\|r_s\|_2.$$

Update the support:

$$\Lambda_{s+1} = \Lambda_s \cup \{i\}.$$

Update the estimate:

$$x_{s+1} = \arg\min_z \|f - \Phi_{\Lambda_{s+1}} z\|_2.$$

Update the residual:

$$r_{s+1} = f - \Phi_{\Lambda_{s+1}} x_{s+1};$$

$s = s + 1$;

end while

Significantly **LESS** complexity

NO performance degrading

under suitable choice of threshold

Other Papers

- **Joint Channel Estimation and Data Detection in MIMO-OFDM Systems: A Sparse Bayesian Learning Approach**
  - R. Prasad, C. R. Murthy, and B. D. Rao
- **Capacity Analysis of One-Bit Quantized MIMO Systems With Transmitter Channel State Information**
  - J. Mo and R. W. Heath
- **A Novel Decomposition Analysis of Nonlinear Distortion in OFDM Transmitter Systems**
  - L. Yiming and M. O'Droma
- **Distributed Kalman Filtering With Quantized Sensing State**
  - D. Li, S. Kar, F. E. Alsaadi, A. M. Dobaie, and S. Cui