



UNIVERSITY OF
TEXAS
ARLINGTON

COLLEGE OF ENGINEERING

Opportunistic Sensing in Wireless Sensor Networks

Q. Liang (liang@uta.edu)/ 817 272-1339
NSF- \$1M (4 years)

Technical barriers/problems:

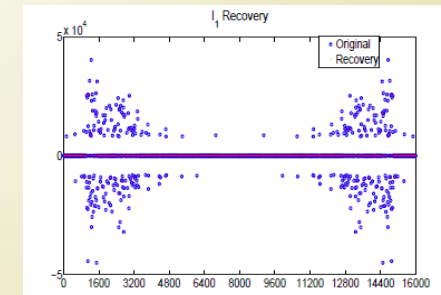
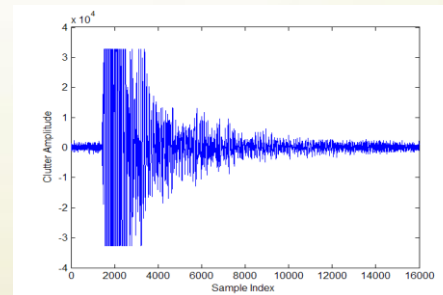
- To develop theoretical and practical opportunistic and compressive sensing algorithms for wireless sensor networks (WSN) for more efficient data processing and information integration
- Explore redundancy reduction from space and time domain

Objectives:

- Establish the theoretical foundation on Opportunistic and compressive sensing for wireless sensor networks

Accomplishments:

- Proposed a theory on opportunistic sensing for spatial and temporal compression and achieved 0.5% compression ratio.
- Applied to real world data
- 5 Refereed publications
- 10 Conference Proceedings
- 2 Ph.D. & 4 M.S. graduated





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Oil Spill Impacts to Beach Soils Based on Radars

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NSF- \$232K (2 years)

Technical barriers/problems:

- Microwave emission and backscattering of the beach soil depend on its dielectric property which exhibits dispersion and absorption and is affected by the oil, salt, and moisture content.
- To generate 2-D imaging based on 1-D signal from radar sensor networks

Objectives:

- To study the BP oil spill impact to Gulf of Mexico based on radar and radar sensor networks

Accomplishments:

- Studied reflectivity kernels of different beaches and obtained the effects of oil spill
- Applied to real world data
- 2 Refereed publications
- 5 Conference Proceedings
- 1 Ph.D. & 2 M.S. graduated

