

정보시스템 연구실

❖ 지도교수: 심병효



❖ 구성원

- 박사후과정 3명
- 박사과정 5명
- 석사과정 3명

❖ 연구분야

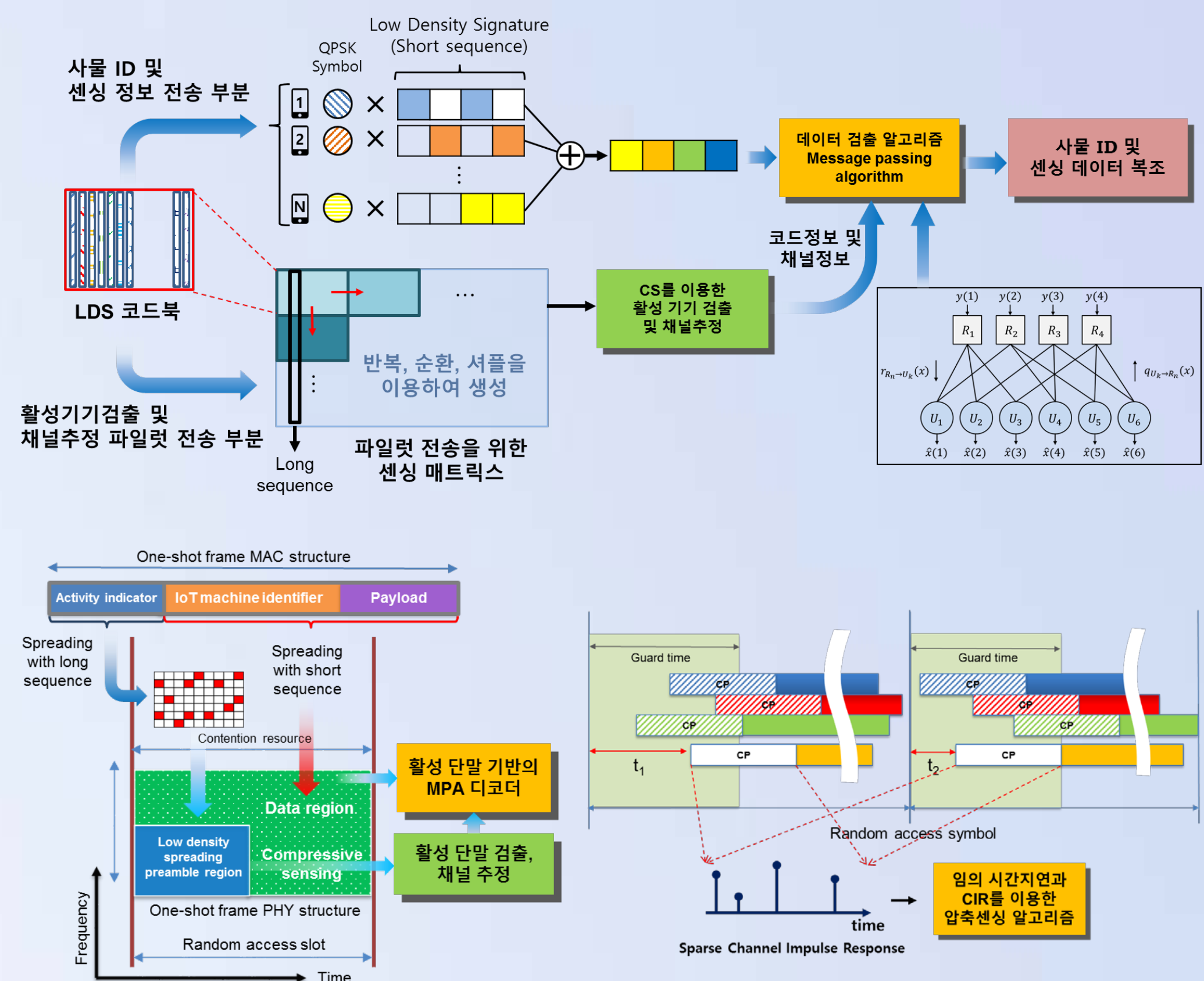
- B4G/5G mobile communication (massive MIMO, IoT, low-latency, multiple access protocol)
- Sparse signal recovery (Compressive sensing, Matrix completion)
- Energy harvesting system
- Machine learning

❖ 대표적인 프로젝트

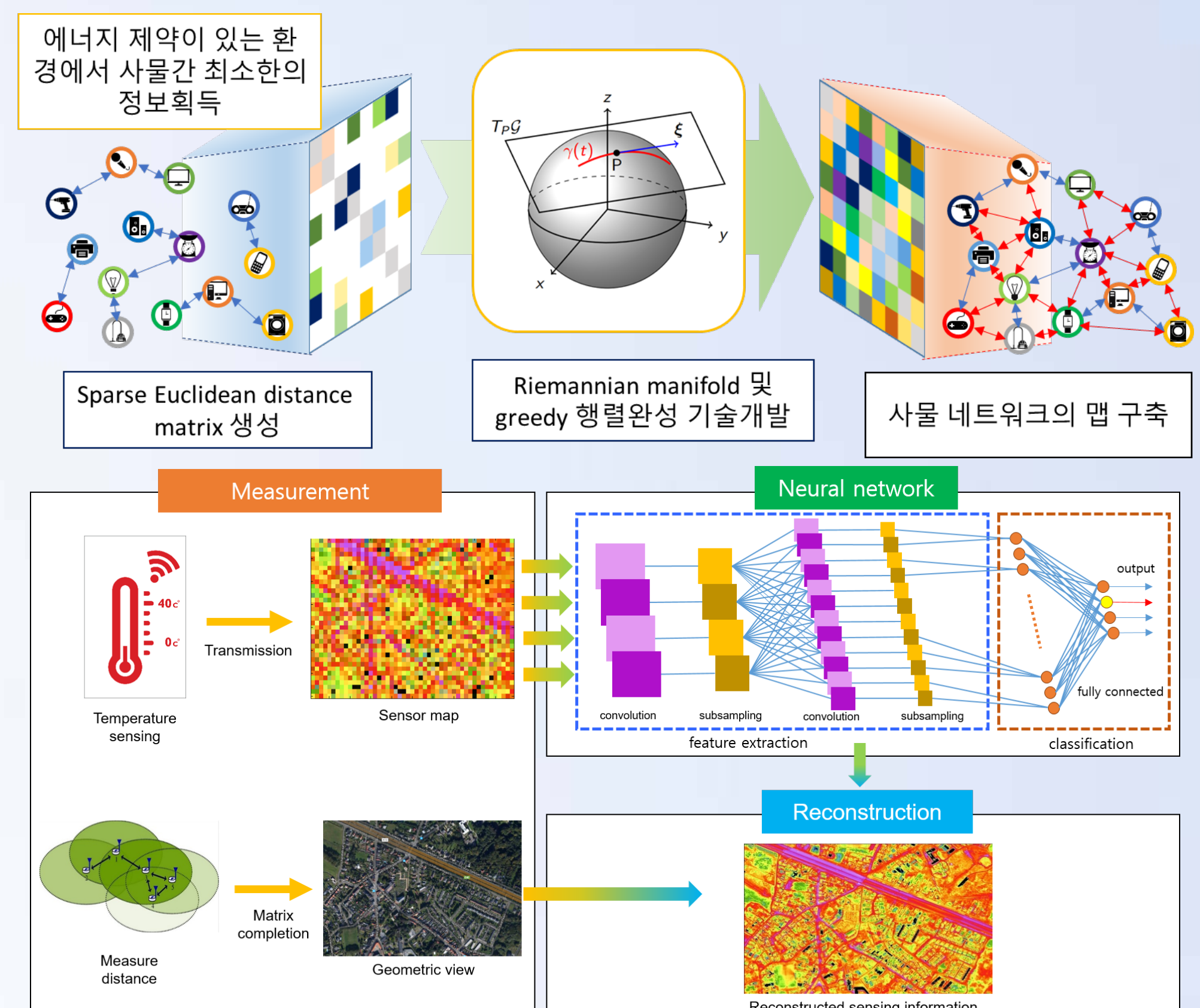
- 주파수 센싱 기반의 스펙트럼 관리 및 미래전파통신 플랫폼 연구
- 미래 사물지능통신 시스템에서 간섭제어 기법 연구
- 사물인터넷을 위한 환경인지 대용량 다중접속 기술 연구
- 5G 시스템을 위한 저지연 대용량 다중접속 연구
- 5G enabling technology를 고려한 차세대 access network 구조 연구

❖ 연구 업적 (최근 5년)

- 국제 저널 논문 : 32 편
- 국제 학회 논문 : 28 편
- 국제 특허 등록 : 3 건
- 국내 특허 등록 : 8 건



Sparse spreading multiple access (SSMA) protocol



Environment-aware information compression technique for IoT system

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❖ 최근 주요 논문

- H. Ji, Y. Kim, J. Lee, E. Onggosanusi, Y. Nam, J. Zhang, B. Lee, and B. Shim, Overview of Full-Dimension MIMO in LTE-Advanced Pro, *IEEE Communications Magazine*, vol. 55, pp. 176-184, Feb. 2017.
- Y. Dong, J. Wang, and B. Shim, DEARER: A Distance-and-Energy-Aware Routing with Energy Reservation for Energy Harvesting Wireless Sensor Networks, *IEEE Journal on Selected Areas in Communications (JSAC)*, vol. 34, no. 12, pp. 3798-3713, Dec. 2016.
- W. Shin, B. Lee, B. Shim, and J. Lee, A MIMO relay with delayed feedback can improve DoF in the K-user MISO interference channel with no CSIT, *IEEE Transactions on Vehicular Technology*, vol. 65, no. 12, pp. 10188-10192, Dec. 2016.
- J. Lee, J. Choi, and B. Shim, Sparse Signal Recovery via Tree Search Matching Pursuit, *Journal of Communications and Networks*, vol. 18, no. 5, pp. 699-712, Oct. 2016.
- W. Shen, L. Dai, Y. Shi, B. Shim, and Z. Wang, Joint Channel Training and Feedback for FDD Massive MIMO Systems, *IEEE Transactions on Vehicular Technology*, vol. 65, no. 10, pp. 8762-8767, Oct. 2016.
- J. Wang and B. Shim, Exact Recovery of Sparse Signals Using Orthogonal Matching Pursuit: How Many Iterations Do We Need?, *IEEE Transactions on Signal Processing*, vol. 64, no. 16, pp. 4194-4202, Aug. 2016.
- Z. Gao, L. Dai, W. Dai, B. Shim, and Z. Wang, "Structured compressive sensing based spatio-temporal joint channel estimation for FDD massive MIMO," *IEEE Transactions on Communications*, vol. 64, pp. 601-617, Feb. 2016.
- J. Wang, S. Kwon, P. Li, and B. Shim, "Recovery of sparse signals via generalized orthogonal matching pursuit: A new analysis," *IEEE Transactions on Signal Processing*, vol. 64, pp. 1076-1089, Feb. 2016.