

Multiantenna Wireless Communications Research by Jinseok Choi at UT Austin

ESPL	1. Resolution Adaptive ADC	2. Antenna Selection	3. Two-Stage Analog Combiner	4. Learning-based ML Detection	5. User Scheduling
Carrier Frequency	MmWave	MmWave Sub-6GHz	MmWave Sub-6GHz	MmWave Sub-6GHz	MmWave
Bandwidth	Narrow	Wide	Narrow	Narrow	Narrow
ADC Resolution	Low	Low	Low	Low One-bit	Low
Beamformer Type	Hybrid	Digital	Hybrid	Digital	Hybrid
Uplink Downlink	Uplink	Uplink Downlink	Uplink	Uplink	Uplink
User	Multi	Multi	Multi	Multi	Multi

Related Publications by Jinseok Choi Under the Direction of Prof. Brian L. Evans

1. Resolution Adaptive ADC

J. Choi, B. L. Evans, and A. Gatherer, "Resolution-Adaptive Hybrid MIMO Architecture for Millimeter Wave Communications", *IEEE Trans. Signal Process.*, 2017

J. Choi, B. L. Evans, and A. Gatherer, "ADC Bit Optimization for Spectrum- and Energy-Efficient Millimeter Wave Communications", *Proc. IEEE Globecom*, 2017

J. Choi, B. L. Evans, and A. Gatherer, "ADC Bit Allocation under a Power Constraint for MmWave Massive MIMO Communication Receivers", *Proc. IEEE ICASSP*, 2017

2. Antenna Selection

J. Choi and B. L. Evans, "Analysis of Ergodic Rate for Transmit Antenna Selection in Low-Resolution ADC Systems", *IEEE Trans. Veh. Technol.*, 2018

J. Choi, B. L. Evans, and A. Gatherer "Antenna Selection for Large-Scale MIMO Systems with Low-Resolution ADCs", *Proc. IEEE ICASSP*, 2018

J. Choi, J. Sung, N. Prasad, X-F Qi, B. L. Evans, and A. Gatherer, "Base Station Antenna Selection for Low-Resolution ADC Systems", *IEEE Trans. Commun.* (submitted)

3. Two-Stage Analog Combiner

J. Choi, G. Lee, and B. L. Evans, "Two-Stage Analog Combining in Hybrid Beamforming Systems with Low-Resolution ADCs", *IEEE Trans. Signal Process.* 2019

J. Choi, G. Lee, and B. L. Evans, "A Hybrid Combining Receiver with Two-Stage Analog Combiner and Low-Resolution ADCs", *Proc. IEEE ICC*, 2019

4. Learning-based ML Detection

J. Choi, Y. Cho, B. L. Evans, and A. Gatherer, "Robust Learning-Based ML Detection for Massive MIMO Systems with One-Bit Quantized Signals", *Proc. IEEE Globecom*, 2019

5. User Scheduling

J. Choi, G. Lee, and B. L. Evans, "User Scheduling for Millimeter Wave Hybrid Beamforming Systems with Low-Resolution ADCs", *IEEE Trans. Wireless Commun.*, 2019

J. Choi and B. L. Evans, "User Scheduling for Millimeter Wave MIMO Communications with Low-Resolution ADCs", *Proc. IEEE ICC*, 2017

