# Low-Resolution PSs Based Hybrid Pre coding for Multi-User Communication Systems

#### ABSTRACT

- We propose a joint iterative training based hybrid pre coding using low-resolution phase shifters.
- Different from the existing works based on the predefined codebook, the iterative training is applied for the hybrid architectures.
- The iterative training converges to the dominant steering vectors that align with the direction of the largest channel gain, thus it can harvest more array gains than the predefined codebook method.
- In addition, the performance loss induced by the finite phase quantization is analytically investigated for multiple RF chains.

#### **EXISTING SYSTEM**

- Large antenna array systems are favoured in nextgeneration wireless communications, as it can offer multiplexing and array gains that enhance the system sum-rate.
- However, the large antenna array systems often necessitate the use of high-cost and power-hungry radio frequency devices.
- The deployment of large antenna arrays at the base station and the mobile stations can offer multiplexing and array gains that enhance the system sum-rate.

#### **PROPOSED SYSTEM**

- The impact of the PS precision was also analyzed.
- Simulation results showed that the proposed hybrid pre coding can achieve a similar rate with the low-resolution PSs compared with the existing works based on the continuous PSs.
- The results also confirmed that the proposed hybrid pre coding relying on the low-resolution PSs can achieve a superior energy efficiency, thus it is favoured to apply the proposed hybrid pre coding to the scenarios where the hardware cost and power consumption are both constrained

### HARDWARE REQUIREMENTS Intel core 13 Processor RAM 2B• 20 GF Hard Disk

## SOFTWARE REQUIREMENTS

: LINUX

• Operating System

- Tool
- Front End

- : Network Simulator-2
- : OTCL (Object Oriented Tool Command Language)

#### REFERENCE

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