

## Subarray Based Multiuser Massive MIMO Design Adopting Large Transmit and Receive Arrays

**Authors :** Tetsiki Taniguchi, Yoshio Karasawa

**Abstract :** This paper describes a subarray based low computational design method of multiuser massive multiple input multiple output (MIMO) system. In our previous works, use of large array is assumed only in transmitter, but this study considers the case both of transmitter and receiver sides are equipped with large array antennas. For this aim, receive arrays are also divided into several subarrays, and the former proposed method is modified for the synthesis of a large array from subarrays in both ends. Through computer simulations, it is verified that the performance of the proposed method is degraded compared with the original approach, but it can achieve the improvement in the aspect of complexity, namely, significant reduction of the computational load to the practical level.

**Keywords :** large array, massive multiple input multiple output (MIMO), multiuser, singular value decomposition, subarray, zero forcing

**Conference Title :** ICICE 2015 : International Conference on Information and Communication Engineering

**Conference Location :** Paris, France

**Conference Dates :** October 29-30, 2015