Research on the Scheme and Performance of Linear SA in CDMA Application

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Abstract— **Firstly, this paper researches on the scheme of amplitude weighting(AW) for smart antenna(SA) beam-forming in linear array. With the proposed mathematical model in this paper, QPSK base-band AW is an effective method for linear SA to realize multi-user and multi-direction transmission, by which the perfect directional beam-forming can be realized with low complexity and low cost. Secondly, this paper analyses the performance of linear SA with 6 array elements(AEs) in different application scenarios. Compared with carrier phase-shifting, the implementation scheme of beam-forming by AW has the feature of easy to implement and high reliability, so that the popularization and application of SA is possible.**

Keyword— **smart antenna (SA); beam-forming; amplitude weighting (AW); QPSK;6 array elements(AEs)**
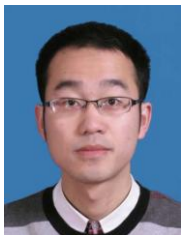
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