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Abstract
In wireless communication Wideband CDMA uplink system, multiple transmission path will cause the multiple access interference and the inter-symbol interference and both of them should be considered at the same time. The main problem needed to be concerned for the multiuser detection is how to decrease multiple access interference and the perspective effect.

In this thesis we discuss the asynchronous effect in the Wideband CDMA uplink system. The asynchronous receiving signal will cause the loss of orthogonal characters and then induce multiple access interference more serious. That’s the reason why the perspective effect can not be ignored so I propose the blind channel estimation to deal with the asynchronous interference. In general there are two methods for blind channel estimation, constant modulus algorithm (CMA) and subspace method. Because the convergent speed for the CMA is so slow that it can’t apply in the real time system, I adopt the subspace decomposition method for blind estimation to let the system be calculated and be fast converged.

Under multiple access interference channel, we proposed the singular value decomposition as our blind channel estimation. The experimental results show that adverted methods we use can decrease the multiple access interference and the perspective effect caused by the asynchronous receiving. The only disadvantage we use the subspace is increasing the operation complexity which will cause the difficulty for the system design so that this problem needs to be researched in the future. Such problems will be our concerning and need to be overcome in the future.
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