

Abstract

This invention discloses an interference cancellation method based on smart antenna, which can solve various interference in mobile communication system such as multipath propagation etc., while using smart antenna. It comprises: with beam forming matrix, making beam forming for output signal of a receiver based on smart antenna, then getting a set of digital signal $NR_k(m)$; canceling other users main path signal included in $NR_k(m)$, then getting another set of digital signal $NS_k(m)$, which only includes needed signal and all interference signal; searching in digital signal $NS_k(m)$ and getting all multipath interference signal coming from other users; canceling other multipath interference signal in $NS_k(m)$; superposing the user main path and each multipath signal in phase coincidence, then getting a digital signal with interference canceled.