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ABSTRACT

PARALLEL INTERFERENCE CANCELLATION RECEIVER FOR MULTIUSER DETECTION OF CDMA SIGNALS

A plurality of communications is received. The communications are transmitted in a wireless code division multiple access format. A channel response for each received communication is estimated. A system response matrix is constructed using codes and the channel responses of the received communications. An objective matrix is produced using the system response matrix. The received communications are matched filtered to produce a first input. The first input is processed with an interference cancellation matrix to produce a first set of symbols of the received communications. The first set of produced symbols are processed with a feedback interference construction matrix to produce feedback interference. The feedback matrix added to an inverse of the interference cancellation matrix equals the objective matrix. The feedback interference is subtracted from a result of the match filtering to produce a next input. The next input is processed with the interference cancellation matrix to produce a next set symbols of the received communications.