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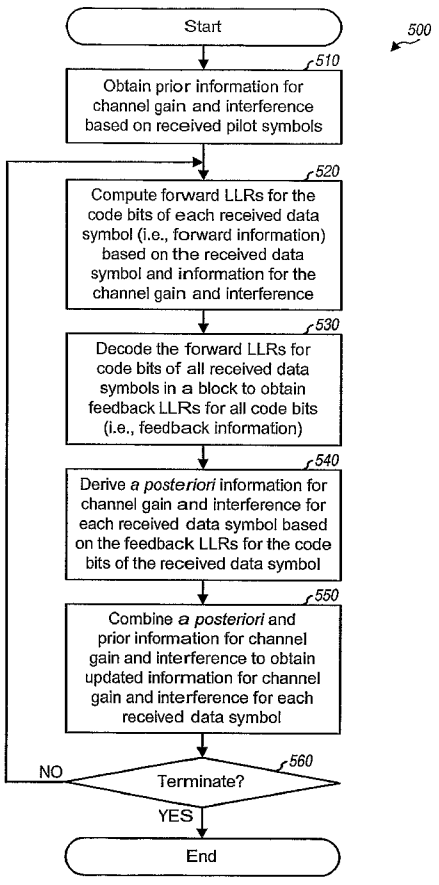
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(54) Title: ITERATIVE CHANNEL AND INTERFERENCE ESTIMATION AND DECODING



(57) Abstract: For an iterative channel and interference estimation and decoding scheme, prior information for channel gain and interference is initially obtained based on received pilot symbols. Forward information for code bits corresponding to received data symbols is derived based on the received data symbols and the prior information and then decoded to obtain feedback information for the code bits corresponding to the received data symbols. *A posteriori* information for channel gain and interference for each received data symbol is derived based on the feedback information for that received data symbol. The *a posteriori* information for the received data symbols and the prior information are combined to obtain updated information for channel gain and interference for each received data symbol. The process can be repeated for any number of iterations. The prior, *a posteriori*, and updated information may be represented by joint probability distributions on channel gain and interference. The forward and feedback information may be represented by log-likelihood ratios.

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