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(57) Abstract :

A method and system for bandwidth efficient channel estimation in a spread spectrum by using a combination of superimposed training sequences and spread spectrum techniques with improved estimation accuracy is disclosed. This method provides channel estimation when number of channel coefficients is very high affecting the bandwidth efficiency of the system. The method is applicable in large MIMO systems, Sub-band Ultra-wideband (SUWB), OFDM-SUWB systems, wideband channels and so on. Superimposed training sequences are spread with spreading codes prior to adding them to the spread data. The spreading codes for the superimposed training sequences are orthogonal to the spreading sequence used to spread data through the transmitter. At the receiver, by despreading prior to channel estimation removes the data interference on the channel estimate. The training sequences are then used to estimate the channel.

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