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(57) Abstract :

The present invention discloses a system (100) and method (200) for detecting control channels in multicarrier communication systems, particularly in Orthogonal Frequency Division Multiplexing (OFDM) systems. The system includes a receiver (102) to receive signals in the time domain, a processor (104), and a memory (106) with instructions enabling signal transformation into the frequency domain. The received signal is divided into multiple subcarriers, and the energy of each subcarrier is evaluated. An analysis of the energy distribution of the subcarriers allows for the detection of control channel presence. A control signal indicating the presence or absence of control channels is generated and transmitted through a transmitter (110), and carries information related to the detected control channels and is used for synchronization, channel estimation, and feedback in the multicarrier communication system. The proposed system and method improves efficiency and reliability of control channel detection, facilitating optimal performance in challenging communication environments.

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