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DATE OF RECEIPT

(54) Title: TRANSCEIVER ALGORITHMS OF ANTENNA ARRAYS

(57) Abstract

A transceiver for improving the spectral efficiency and the capacity of cellular communication systems is disclosed. The transceiver uses an antenna array for communicating in a cellular communication system with a plurality of mobile stations. In addition, the transceiver contains a spatial filter connected to an antenna array wherein the spatial filter has as many outputs as there are array elements and as many inputs as there are spatial channels. A splitter then splits data to be transmitted to each mobile station into a number of parallel data streams, the number of parallel data streams corresponds with the number of spatial channels in the system, wherein the data streams, are delayed based upon uplink measurements. Finally, power allocators are provided for allocating transmission power to each possible channel based upon long-term SNR measurements on the uplink.

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