



ABSTRACT:

Downlink Beamforming Method

A method for downlink capacity enhancement in a wireless communications system comprising a base station with antenna array and terminals that are physically remote from said base station, the method comprising steps of:

- receiving at said base station antenna array combinations of arriving signals from said plurality of remote terminals;
- estimating an uplink channel covariance matrix (UCCM) for each of said terminals from said combinations of arriving signals;
- constructing from each of said UCCM a downlink channel covariance matrix (DCCM);
- calculating from all said DCCM a downlink weight vector for each of said terminals; and
- transmitting a set of information signals from said base station antenna array according to said downlink weight vectors.