Title (en)

SYSTEMS AND METHODS TO EXPLOIT AREAS OF COHERENCE IN WIRELESS SYSTEMS

Title (de)

SYSTEME UND VERFAHREN ZUR NUTZUNG VON KOHÄRENZBEREICHEN IN DRAHTLOSEN SYSTEMEN

Title (fr)

SYSTÈMES ET PROCÉDÉS POUR EXPLOITER DES ZONES DE COHÉRENCE DANS DES SYSTÈMES DE COMMUNICATION SANS FIL

Publication

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Application

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Abstract (en)

[origin: WO2013040089A2] A multiple user (MU)-multiple antenna system (MAS) that exploits areas of coherence in wireless channels to create multiple non-interfering data streams to different users. In one embodiment, non-linear or linear precoding is used to create separate areas of coherence to different users. By way of example, the non-linear precoding may comprise dirty-paper coding (DPC) or Tomlinson-Harashima precoding and the linear precoding may comprise block diagnolization (BD) or zero-forcing beamforming (ZF-BF). Limited feedback techniques may also be employed to send channel state information (CSI) from the plurality of users to the MU-MAS. In some embodiments, a codebook is built based on basis functions that span the radiated field of a transmit array. Additionally, the precoding may be continuously updated to create non-interfering areas of coherence to the users as the wireless channel changes due to Doppler effect. Moreover, the size of the areas of coherence may be dynamically adjusted depending on the distribution of users.

IPC 8 full level

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