
# BLIND DIFFERENTIAL SCHEMES FOR CDMA ON DISPERSIVE MIMO CHANNELS (WedAmOR2)

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**Abstract :**

This paper considers the problem of fully blind detection in an asynchronous dispersive Multiple−Input Multiple−Output (MIMO) Code Division Multiple Access (CDMA) channel, wherein each user is assigned one and the same spreading code to be used on all of the transmit antennas. In this scenario, differential space−time coding is needed, and conditions for blind linear user separability and channel equalization are stated. Focusing on the differential Alamouti code, two new decoding structures suitable for frequency−selective channels are then presented and discussed. Interestingly, they are amenable to a fully−blind implementation, i.e. they require only prior knowledge of the spreading code of the user of interest, while retaining a complexity only linear in the cardinality of the transmitted constellation.

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