GENERALIZED PILOT ASSISTED CHANNEL ESTIMATION FOR WCDMA (MonAmOR12)

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Abstract :

A general method for user dedicated downlink channel estimation in WCDMA receivers is addressed, particularly suited in the presence of dedicated channel transmit beamforming. A three−step dedicated channel estimation procedure is derived which exploits all the existing pilot sequences as well as the structured dynamics of the channel. In the first step, least squares (LS) estimates of the channels associated with dedicated and common pilots are built. In the second step, an improved unbiased minimum mean square error (UMMSE) estimate of the dedicated channel is obtained by optimally combining the initial LS estimates exploiting the correlation between dedicated and common pilot channels. In the last step, the improved dedicated channel estimate is further refined via Kalman filtering by exploiting the channel temporal correlation.

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