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| **S.No** | **Title** | **Author** | **Journal** | **Findings** | **Parameters** | **Graph** | **Advantages** |
| 1 | ESTIMATION OF CHANNEL IN OFDM WIRELESS CHANNEL USING LS AND MMSE TECHNIQUES | R Srinivasa Aditya Varma, Marthy Siva Sai Krishna | International Journal of Electronics and Communication Engineering and Technology (IJECET) | * used LS (Least Square) and MMSE (Minimum Mean Square Error) to estimate a channel and compared those two techniques. * techniques such as FDMA, TDMA, and CDMA for effective utilization of bandwidth. | This paper is being presented on basis of channel estimation of wireless mobile OFDM channels using known pilot symbols.   * To use the MMSE estimator, some prior knowledge of the noise variance and channel covariance must be known. * complexity of MMSE estimator is more when compared to LS based estimator. |  |  |
| 2 | Coherent Detection of Turbo-Coded OFDM Signals Transmitted Through Frequency Selective Rayleigh Fading Channels with Receiver Diversity and Increased Throughput | K. Vasudevan | presented as an Invited Talk at the International Federation of Nonlinear Analysts (IFNA) World Congress, Greece and published in ISPCC | * Deals with coherent receivers based on orthogonal frequency division multiplexing (OFDM) * first outlining the tasks of a coherent receiver. * The basic tasks of the coherent receiver would be:   1. To correctly identify the start of the (OFDM) frame (SoF), such that the probability of false alarm (detecting an OFDM frame when it is not present) or equivalently the probability of erasure/miss (not detecting the OFDM frame when it is present) is minimized. We refer to this step as timing synchronization.  2. To estimate and compensate the carrier frequency offset (CFO), since OFDM is known to be sensitive to CFO. This task is referred to as carrier synchronization.  3. To estimate the channel impulse/frequency response.  4. To perform (coherent) turbo decoding and recover the data   * The modifications in the turbo decoder in the presence of receive diversity and the variance of the channel estimation error * enhanced frame structure, that increase the throughput, which in turn, depends on Ld   This paper deals with linear complexity coherent detectors for turbo-coded OFDM signals transmitted over frequency selective Rayleigh fading channels.  Simulation results show that it is possible to achieve a BER of 10−5 at an SNR per bit of 8 dB and throughput equal to 82.84%, using a single transmit and two receive antennas. | * In a multiuser scenario, the suggested technique is OFDM-TDMA * The uplink and downlink may be implemented using time division duplex (TDD) or frequency division duplex (FDD) modes. |  | 1.It is shown that, for a sufficiently long preamble, the variance of the channel estimator proposed in eq. givenapproaches zero.  2. A known postamble is used to accurately estimate the residual frequency offset for large data lengths, thereby increasing the throughput compared to [4,5] references. 3. Turbo codes are used to attain BER performance closer to channel capacity compared to any other earlier work in the open literature, for channels having a uniform power delay profile (to the best of the authors knowledge, there is no similar work on the topic of this paper, other than [4,5]). 4. A robust turbo decoder is proposed, which performs effectively over a wide range of SNR (0–30 dB).  [4. Vasudevan, K. (2013). Coherent detection of turbo coded OFDM signals transmitted through frequency selective rayleigh fading channels. In Proceedings of the IEEE ISPCC. Shimla, India, Sept. 2013.  5. Samal, U. C., & Vasudevan, K. (2013). Bandwidth efficient turbo coded OFDM systems. In Proceedings of the IEEE ITST (pp. 490–495), Tampere, Finland, Nov. 2013.] |
| 3. | Channel Estimation for Wireless OFDM Communications | Jia-Chin Lin | Publisher:Sciyo | * variety of CE techniques on OFDM communications were investigated. | They used different parameters in different models | In this, they showed different moles and the formula derivations for those models like Discrete-time model, Continuous-time model,etc and different types of channel estimation like CTPA-based CE , BTPA-based CE , TD-redundancy-based CE , Frequency-domain channel estimation based on comb-type pilot arrangement etc. | The LS CE technique has been thoroughly investigated in practical mobile environments. By taking advantage of SIC mechanisms, the studied technique can efficiently eliminate various interferences, accurately estimate the CIR, effectively track rapid CIR variations and, therefore, achieve low error probabilities. The studied technique can also achieve low bit error floors. The generic estimator assisted by LS CE can be performed sequentially on all OFDM blocks for complexity reduction without a priori channel information, which is required by conventional techniques based on MMSE. |
| 4. | Channel Estimation for OFDM Systems with Transmitter Diversity in Mobile Wireless Channels | Ye (Geoffrey) Li, Nambirajan Seshadri , Sirikiat Ariyavisitakul | IEEE JOURNAL | * studied transmitter diversity using space-time coding for OFDM systems. * developed channel parameter estimation approaches, which are crucial for the decoding of space-time codes, and we derive the MSE bounds for these estimation approaches. | For an OFDM system with two transmitter antennas and two receiver antennas using space-time coding, permitting 1.475 bits/s/Hz, the required SNR is about 9 dB for 10% WER, and 7 dB for 1% BER, for channels with the two-ray, TU, and HT delay profiles and a Doppler frequency of 40 Hz | * a nine-tap significant-tap-catching (STC) estimator is used          * a seven or nine-tap STC estimator is used | * OFDM systems with transmitter diversity using space-time coding can be used for highly efficient data transmission over mobile wireless channels. |
| 5. | Channel Estimation for Two-Way Relay OFDM Networks | Weiwei Yang, Yueming Cai, Junquan Hu, Wendong Yang1 | EURASIP Journal | * proposed LS-based channel estimation algorithms under block-based training schemes for two-way relay OFDM networks. * By minimizing MSE, the condition and design method of the optimal training sequences was discussed. * The optimal training sequences based on a special sequence called Zadoff-Chu sequence are designed to achieve the same minimum MSE performance as the orthogonal optimal training sequences with better PAPR performance. |  |  | * By minimizing MSE, the condition and design method of the optimal training sequences was discussed. The optimal training sequences based on a special sequence called Zadoff-Chu sequence are designed to achieve the same minimum MSE performance as the orthogonal optimal training sequences in [22], with better PAPR performance. |