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Abstract

In case of low signal to noise ratio scenario is distracted or not uniform in orthogonal frequency division multiplexing (OFDM) system. So synchronization aspect in Cognitive Radio Systems (CRS) may change the distraction. If Iterative process is used in synchronization then it will be better for some time span but in the long interval it may affect badly. So a fine frequency offset based synchronization is used to allow the infirmity and minimizes the signal to noise ratio (SNR) level. In this paper we have presented a continuous equalization based on Fine Frequency Offset (FFO). The results show the betterment in comparison to the previous methodology.

References

- D. Gesbert, M. Shafi, D. Shiu, P. J. Smith and A. Naguib, "From Theory to Practice: An Overview of MIMO Space-Time Coded Wireless Systems," IEEE J. Sel. Areas Commun. , vol. 21, no. 3, pp. 281-302, April 2003.

- H. Boelcskei, D. Gesbert, C. B. Papadias and A. J. van der Veen, editors, "Space-Time Wireless Systems: From Array Processing to MIMO Communications", Cambridge University Press, 2006.
- H. Viswanathan, S. Venkatesan and H. Huang, "Downlink capacity evaluation of cellular networks with known-interference cancellation", IEEE J Sel. Areas Comm. , vol. 21, no. 5, pp. 802-811, June 2003.
- Q. H. Spencer, A. L. Swindlehurst and M. Haardt, "Zeroforcing methods for downlink spatial multiplexing in multiuser mimo channels", IEEE Trans. on Signal Processing, vol. 52, no. 2, pp. 461-471, Feb. 2004.
- Lai-U Choi and Ross D. Murch, "A transmit preprocessing technique for multiuser mimo systems using a decomposition approach", IEEE Tran. Wireless Commun. , vol. 3, no. 1, pp. 20 - 24, Jan. 2004.
- Y. Wu, J. Zhang, H. Zheng, X. Xu, S. Zhou, "Receive antenna selection in the downlink of multiuser mimo systems", IEEE VTC, Sept. 2005.
- Zhihua Shi, Chunming Zhao, and Zhi Ding, "Low complexity eigenmode selection for MIMO Broadcast Systems with Block Diagonalization", IEEE ICC 2008, pp. 3976 - 3981, May. 2008.
- IIS. Haykin, "Cognitive radio: Brain-empowered wireless communications", IEEE Journal on Selected Areas in Communications, vol. 23, no. 2. Feb. 2005, pp. 201-220.
- T. Weiss and F. Jondral, "Spectrum pooling: An innovative strategy for enhancement of spectrum efficiency", IEEE Communications Magazine, vol. 42, no. 3, Mar. 2004, pp. S8- 14.
- H. Tang, "Some physical layer issues of wide-band cognitive radio systems", in Proc. 1st IEEE International Symposium on New Frontiers in Dynamic Spectrum Access Networks. Nov. 2005, pp. 151-159.
- D. Qu, J. Ding, T. Jiang and X. Sun, "Detection of Non-Contiguous OFDM Symbols for Cognitive Radio Systems without Out-of-Band Spectrum Synchronization", in IEEE Transactions on Wireless Communications. vol. 10, no. 2, Jan. 2011, pp. 693-701.
- J. Ding, D. Qu, T. Jiang, X. Sun and L. Liu, "Active Subchannel Detection for Non-Contiguous OFDM-Based Cognitive Radio Systems", in IEEE Globecom, Dec. 2010, pp. 1-6.
- P. H. Moose, "A technique for orthogonal frequency division multiplexing frequency offset correction", IEEE Transactions on Communications. vol. 42, no. 10, Oct. 1994, pp. 2908-2914.
- T. M. Schmidl and D. C. Cox, "Robust frequency and timing synchronization for OFDM", IEEE Transactions on Communications. vol. 45, no. 12, Dec. 1997, pp. 1613-1621.
- M. Morelli and U. Mengali, "An improved frequency offset estimator for OFDM applications", IEEE Communications Letters. vol. 3, no. 3, Mar. 1999, pp. 75-77.
- Akyildiz, W. -Y. Lee, and K. Chowdhury, "Spectrum management in cognitive radio ad hoc networks", IEEE Network, vol. 23, no. 4, pp. 6– 12, 2009.
- J. Mitola and G. Q. Maguire, "Cognitive radio: making software radios more personal", IEEE Personal Communications, vol. 6, no. 4, pp. 13–18, Aug. 1999.
- Sudesh Gupta, Rajesh Nema, Puran Gour, "Authentication of Primary User in Cognitive Radio", International Journal of Advanced Computer Research (IJACR), Volume

2, Number 1, March 2012.

- Mohd. Fahad Fahim,Mohd. Sarwar Raeen," SVD Detection for Cognitive Radio Network based on Average of Maximum- Minimum of the ICDF", International Journal of Advanced Computer Research (IJACR),Volume-2, Number-3,Issue-5,September-2012.
- Stergios Stotas and ArumugamNallanathan," Enhancing the Capacity of Spectrum Sharing Cognitive Radio Networks", IEEE Transactions on Vehicular Technology 2011.
- Shixian Wang, Hengzhu Liu, LunguoXie, Wenmin Hu," Cognitive Radio Simulation Environment Realization Based on Autonomic Communication", IEEE 2011.
- Mohd. FahadFahim, Mohd. SarwarRaeen,"SVD Detection for Cognitive Radio Network based on Average of MaximumMinimum of the ICDF",International Journal of Advanced Computer Research (IJACR) Volume-2 Number-3 Issue-5 September-2012.
- Mayank Gupta, Nimrat Kumar Narula, VK Panchal, Ashok Chandra,"A Brief Overview of the Developments of the Cognitive Radio Technology",International Journal of Advanced Computer Research (IJACR),Volume-2 Number-4 Issue-6 December-2012.
- Saketkumar,PusprajTanwar,"Removal of cyclic prefix in Adaptive Non-Contiguous OFDM for Dynamic Spectrum Access using DWT and WT",International Journal of Advanced Computer Research (ISSN (IJACR),Volume-2 Number-3 Issue-5 September-2012.
- StergiosStotas and ArumugamNallanathan , "On the Throughput and Spectrum Sensing Enhancement of Opportunistic Spectrum Access Cognitive Radio Networks", IEEE Transactions on Wireless Communications.
- Liu, J. G. ; Xianbin Wang; Chouinard, J. -Y. , "Iterative Blind OFDM Parameter Estimation and Synchronization for Cognitive Radio Systems," Vehicular Technology Conference (VTC Spring), 2012 IEEE 75th , vol. , no. , pp. 1,5, 6-9 May 2012.
- Dhawal Beohar, V. B. Baru,"An efficient Synchronization Aspects in Cognitive Radio Systems " , International Journal of Advanced Computer Research (IJACR), Volume-3, Issue-10, June-2013 ,pp. 177-182.
- Jie Ding; Daiming Qu; Li Li, "A robust frequency synchronization method for non-contiguous OFDM-based cognitive radio systems," Communications and Information Technologies (ISCIT), 2012 International Symposium on , vol. , no. , pp. 776,780, 2-5 Oct. 2012.
- Shaw, S. ; Ghamri-Doudane, Y. ; Santos, A. ; Nogueira, M. , "A reliable and distributed time synchronization for Cognitive Radio Networks," Global Information Infrastructure and Networking Symposium (GIIS), 2012, vol. , no. , pp. 1,4, 17-19 Dec. 2012.
- Chin, W. ; Kao, C. ; Chen, H. ; Liao, T. , "Iterative Synchronization-Assisted Detection of OFDM Signals in Cognitive Radio Systems," Vehicular Technology, IEEE Transactions on, vol. 63, no. 4, pp. 1633, 1644, May 2014.

Index Terms

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Keywords

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