Publications Template

#	Research Title	Field	Abstract	Year of Publication Publishing	Publishing Link "URL"
1	Analysis for NOMA-CoMP-JT Global Precoding Matrix and IRC Receiver for LTE-A	Communication	**N**on-orthogonal multiple access (NOMA) is considered a promising multiple access scheme in the fifth generation (5G). NOMA is used for improving spectrum efficiency and massive connectivity. In this paper, the performance of NOMA with coordinated multi-point transmission and reception (CoMP) is investigated. NOMA-CoMP is combined with interference rejection combining (IRC) receiver for closed loop spatial multiplexing multiple input multiple output (MIMO). Also, the far user selects the closed loop precoding matrices for MIMO in a joint fashion to fit the independent MIMO channels from two base stations (eNBs). Moreover, a comparison between NOMA with CoMP and NOMA without CoMP for different modulation schemes is clarified. The geometric mean and fixed power allocation are proposed. The effect of fading correlation between elements of transmit and receive antennas is illustrated. The effect of different distance ratio between remote eNB and near user of serving cell is considered. Simulation results show that the NOMA-CoMP with global precoding matrix scheme outperforms NOMA without CoMP. In addition, when the distance ratio between remote eNB and near user of serving cell is increased, the performance of system improves because the interference from remote eNB decreases. Moreover, the performance improves when	2016	13^{th} IEEE International Conference on Networking, Sensing and Control (ICNSC 2016)

			serving cell has lager size compared to remote cell size.		
2	Dynamic Selection for CoMP-JT over Correlated MIMO Channel with Open Loop Precoding and IRC Receiver for LTE-A	Communication	This paper addresses the problem of Co-channel interference in the presence of fading correlation between transmit and receive antenna pairs. There are two ways for mitigating interference and improving the cell-edge user performance in Long Term Evolution-Advanced (LTE-A) system. First method is coordinated multi-point transmission and reception (CoMP) and second method is interference rejection combining (IRC) receiver. In this paper we propose a joint transmission (CoMP-JT) scheme for LTE-CoMP with open loop cyclic delay diversity (CDD). We enhance the performance of CoMP with dynamic cell selection and compare two schemes for open loop CDD. A cell-edge user selects the base stations that jointly transmit the desired signal from the available ones (we assumed 3). In addition, edge users are likely to be subject to severe Co-channel interference from eNBs outside the joint transmission set. In order to address this issue, IRC receiver is introduced. In this paper the performance of linear IRC receiver structures is investigated for interference suppression for CoMPJT with open loop CDD. Simulation results show that the CoMPJT	2015	IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC): Mobile and Wireless Networks, vol. 26, Hong-Kong, China, ," August 2015.

			using open loop MIMO with proposed precoding scheme, in case of cell selection, considerably improves the performance. In addition, using MMSE-IRC gives much better performance than the conventional minimum mean square error (MMSE) in the presence of co-channel interference.		
3	Performance of Joint Transmission CoMP with Global Precoding Matrix and IRC Receiver for LTE-A,"	Communication	Coordinated multi-point transmission and reception (CoMP) is one of the most important ways of mitigating interference and improving spectral efficiency for cell edge users in Long Term Evolution-Advanced (LTE-A) system. In this paper we propose a joint transmission scheme for LTE-CoMP where MIMO precoding matrices at the transmission points are jointly (globally) selected to achieve higher capacity. The precoding matrices are jointly chosen by the User Equipment (UE) to fit the independent MIMO channels from two base stations (eNBs). In addition, edge users are likely to be subject to severe Co-channel interference from eNBs outside the joint transmission set. In order to address this issue, interference rejection combining (IRC) receiver is introduced to improve the cell-edge user performance. In this paper the performance of linear IRC receiver structures is investigated for interference suppression for CoMP-JT with local and global precoding matrix for closed loop spatial multiplexing MIMO. Simulation results show that the CoMP-JT with global precoding matrix scheme outperforms local precoding matrix with more than 1 dB. In addition, using MMSE-IRC gives much better performance than the conventional minimum mean square error (MMSE) in the presence of co-channel interference.	2015	International Conference on New Technologies, Mobility and Security (NTMS), vol.7, Paris, France, July 2015.

	CoMP-JT with Dynamic Cell Selection, Global Precoding Matrix and IRC Receiver for LTEA,"	Communication	*Coordinated multi-point transmission and reception (CoMP) is introduced in LTE-A to mitigate cochannel interference and improve the cell-edge user experience. In this paper we propose a jointtransmission scheme for LTE-CoMP and we enhance the performance of CoMP with two techniques: 1-dynamic MIMO cell selection and 2- closed loop MIMO with global precoding matrix selection. A celledge user selects the base stations that jointly transmit the desired signal from the available ones (weassumed 3). The user also selects the closed loop precoding matrices for MIMO in a joint fashion to fit the independent MIMO channels from two base stations (eNBs). In addition, edge users are likely to be subject to severe Co-channel interference from eNBs outside the joint transmission set.To address cochannelinterference from the base station(s) that are not included in CoMP joint transmission set, the user equipment employs Minimum Mean Squared Error receiver with Interference Rejection Combining (MMSE-IRC). We illustrate the effect of fading correlation between elements of the transmit and receive antennas. Also, the effect of the desired to interference eNB power ratio in case of medium correlation for 3 and 4 layers using MMSE-IRC receiver is studied. Also we compare the BER performance for 3 and 4 layers in case of different values of the desired to interference eNB power ratio. Simulation results show that the performance of CoMP with cell selection considerably improves the performance. Also, global*	2015	International Journal of Wireless & Mobile Networks (IJWMN) Vol. 7, No. 3, June 2015.

			selection of the precoding matrices outperforms local selection. In addition, using MMSE-IRC gives much better performance than the conventional minimum mean square error (MMSE) in the presence of co-channel interference		
	Improving Bit Error Rate of STBC–OFDM Using Convolutional and Turbo Codes Over Nakagami-m Fading Channel for BPSK Modulation"	Communication	In this paper, a new trend of Space Time Block codes- Orthogonal Frequency Division Multiplexing (STBC-OFDM) with Convolutional and Turbo codes. The applied method is based on Alamouti's scheme[1].We examine the performance of two, three and four transmitters with one receiver over Nakagami-*m* fading channel using convolutional and turbo codes using BPSK .Also we examine their performance using turbo code with different rates (1/2, 1/3) at BPSK. The performance of two transmitters with two receivers is also shown using convolutional and turbo codes over Nakagami-*m* fading channel at BPSK.	2011	International Conference on Consumer Electronics, Communications and Networks (CECNet), XianNing, China,Vol. 5, Pages 4140-4143 ,April 2011 .
	Improving Bit Error Rate of STBC–OFDM Using Convolutional and Turbo Codes Over Nakagami-m Fading Channel"	Communication	In this paper, a new trend of Space Time Block codes-Orthogonal Frequency Division Multiplexing (STBCOFDM) with Convolutional and Turbo codes. The applied method is based on Alamouti's scheme[1].We examine the performance of two, three and four transmitters with one receiver over Nakagami-m fading channel using convolutional and turbo codes using different types of modulation such as	2011	International Conference on IEEE Wireless and Microwave Conference (WAMICON 2011), Melbourne, Florida ,Vol. 12, Pages 389611-389617,April 2011.

			BPSK and 64-QAM . Also we examine their performance using turbo code with different rates (1/2, 1/3) at BPSK. The performance of two transmitters with two receivers is also shown using convolutional and turbo codes over Nakagami-m fading channel at BPSK.		