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Title: A three-staged improved OSIC algorithm with lower complexity in MIMO system

Authors: [Dai, Zhen](#)^{1, 2} ; [Jing, Xiaojun](#)^{1, 2}; [Huang, Hai](#)^{1, 2}

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Abstract: As a promising MIMO spatial multiplexing method, Vertical Bell Laboratories Layered Space-Time (V-BLAST) is able to achieve high channel capacity without any increase of bandwidth and transmission power. A threestaged ZF-OSIC algorithm with ML which we call ML-OSIC-ML MIMO detection method based on SON (Self-organizing networks) is proposed in this paper. The proposed algorithm firstly detect the strongest SNR layers with ML, and detect the medium SNR layers with OSIC, and finally the weakest layers with ML. Simulation results and the complexity analysis show that this algorithm receives better performance than OSIC, and lower computation complexity. Some advice about choosing the number of layers to be detected with ML is given at the end of the paper. © Institute for Computer Sciences, Social Informatics and Telecommunications Engineering 2015.

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