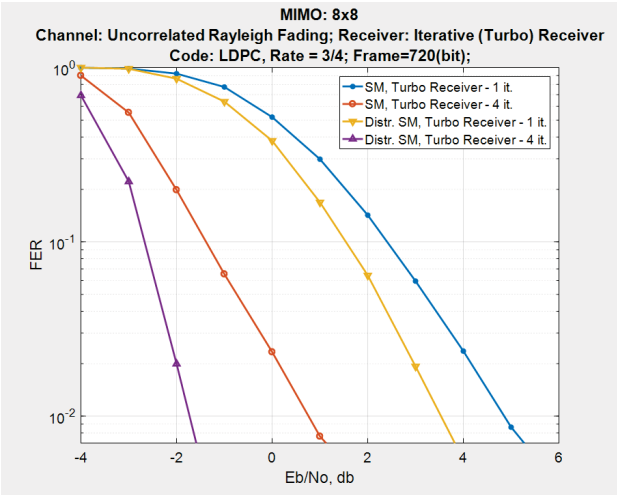

Fig. 4. FER versus signal-to-noise ratio per bit for a MIMO system with conventional spatial multiplexing and distributed spatial multiplexing

traditional spatial multiplexing it is MMSE, and for distributed - a Kalman filter.

From the results of Fig. 4, it can be concluded that the use of distributed spatial multiplexing gives us an additional energy gain of about 2 dB. Moreover, this gain holds both for a simple non-iterative receiver and for a Turbo receiver. Additionally, the use of an iterative receiver allows us to obtain a gain of about 8 dB with 3 iterations of the algorithm.

V. Conclusion

This paper proposed a new method of distributed spatial multiplexing for MIMO channel systems. In the algorithm, each QAM symbol after orthogonal transformation is sequentially emitted by each transmit antenna. As a result of this approach, an energy gain is achieved due to spatial and temporal diversity. A linear Kalman filter can be used to receive a signal constructed in such a way. Moreover, this transmission method and linear receiver can be used efficiently with the Turbo iterative processing, which provides additional gains at the receiver.

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