receive antennas, where the solid lines stand for our proposed scheme, while the dotted line stands for the double-orthogonal coded (DOC)-STFS-CDMA scheme proposed in [9]. It is clear that our scheme has better resiliency to the frequency selectivity of the channel due to the inherent property of avoiding poor channel quality using the proposed space, time and frequency spreading.

Fig. 6. BER comparison for OFDM-CDMA system with 4Tx, 4Rx with our proposed scheme (solid) and DOC-STFS-CDMA [9] (dotted) in a slow fading frequency-selective environment.

Fig. 7 shows the Block error rate (BLER) performance of OFDM-CDMA versus the average $E_s/N_0$ with different number of active users with slow fading channel for 4 transmit and 4 receive antennas, where the solid lines stand for our proposed scheme, while the dotted line stands for the 2D OFDM-CDMA. It is obvious that when we spread our signal on space, time, and frequency, we had better performance as we were able to maintain maximum achievable spatial diversity on the receiver side.

Fig. 8 and Fig. 9 show the BER performance of OFDM-CDMA versus the average $E_b/N_0$ for 1 and 2 receive antennas, respectively. In our simulations, we compare our proposed scheme with 2D OFDM-CDMA described in [6]. The maximum number of users allowed in Fig. 8 and Fig. 9 are 16, and 32 users, respectively. Simulation results show that our