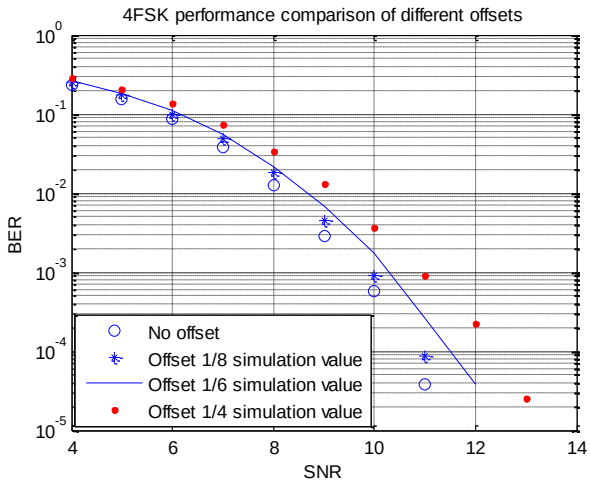

Fig. 3 BER of three slots network coding (only the terminal B without offset).

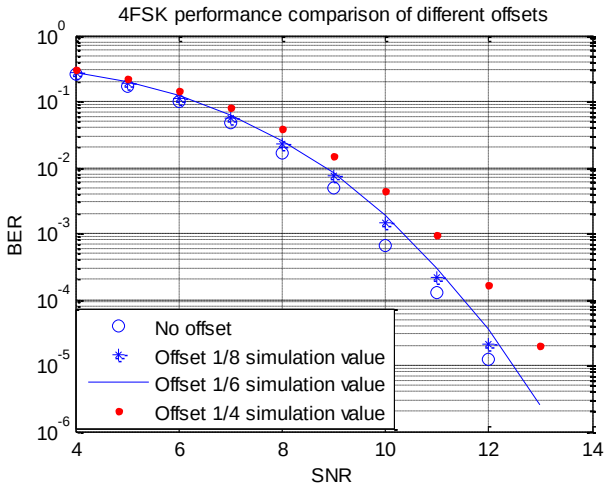

Fig 4 BER of three slots network coding (only the terminal B with 1/6 offset)

V. Conclusions

We consider the transmission system containing frequency offset in 4FSK non-coherent demodulation in additive Gaussian channel. Firstly, a loose upper bound BER of 4FSK scheme is deduced with frequency offset in direct link, and the effectiveness of the formula is verified by computer simulation. Secondly, 4FSK modulation is applied to three-slot two-way relay network. Simulation results show that when the error rate reaches 10^{-4}, the normalized frequency offset 1/4 will lead about 2 dB SNR losses in the three-slot network coding strategy. Since only the frequency offset of three-slot two-way relay scheme is considered in this work, the influence of frequency offset on two-slot two-way relay scheme remains to be done in further research in the future.

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