

ABSTRACT:

Coexistence analysis is extremely important in examining the possibility for spectrum sharing between orthogonal frequency-division multiplexing (OFDM)-based international mobile telecommunications (IMT)-Advanced and other wireless services. In this letter, a new closed form method is derived based on power spectral density analysis in order to analyze the coexistence of OFDM-based IMT-Advanced systems and broadcasting frequency modulation (FM) systems. The proposed method evaluates more exact interference power of IMT-Advanced systems in FM broadcasting systems than the advanced minimum coupling loss (A-MCL) method. Numerical results show that the interference power is 1.3 dB and 3 dB less than that obtained using the A-MCL method at cochannel and adjacent channel, respectively. This reduces the minimum separation distance between the two systems, which eventually saves spectrum resources.