

Mário Marques da Silva, Américo Correia, "A Pre-distortion Filtering for MAI Reduction with Selective Transmit Diversity" - PIMRC 2004, Barcelona, Spain, September 2004;

Abstract: The purpose of the current work is to analyze several schemes to combat both the MAI and fading, in the downlink direction. We propose a new predistortion (PD) filtering technique, which can be used to combat the multiple access interference (MAI), combined the selective transmit diversity (STD) for high data rate transmissions over frequency selective Rayleigh fading channels. The proposed PD scheme considers a Rake in the receiver. By predistorting the signals to be transmitted by the base station (BS) with a minimum variance (MV) algorithm, the orthogonality between the desired signal and all interfering signals can be improved. With the PD, the increase in performance is achieved with a small increase in power processing at the BS, avoiding any need to increase complexity at the mobile station (MS)