

ABSTRACT**EFFICIENT COMPUTATION OF SPATIAL FILTER MATRICES FOR STEERING
TRANSMIT DIVERSITY IN A MIMO COMMUNICATION SYSTEM**

Techniques for efficiently computing spatial filter matrices are described. The channel response matrices for a MIMO channel may be highly correlated if the channel is relatively static over a range of transmission spans. In this case, an initial spatial filter matrix may be derived based on one channel response matrix, and a spatial filter matrix for each transmission span may be computed based on the initial spatial filter matrix and a steering matrix used for that transmission span. The channel response matrices may be partially correlated if the MIMO channel is not static but does not change abruptly. In this case, a spatial filter matrix may be derived for one transmission span and used to derive an initial spatial filter matrix for another transmission span m . A spatial filter matrix for transmission span m may be computed based on the initial spatial filter matrix, e.g., using an iterative procedure.

Figure 4