Consider the incident signal as a far-field narrow-band signal, and the array as a uniform line array containing N elements with an array spacing d. Assume that there are K signals incident from D mutually independent far-field sources , i = 1, 2, ..., D, with multipath effects, where the i-th coherent group contains multipath signals from the direction , i = 1, 2, ..., D; j = 1, 2, ..., , respectively, corresponding to the fading coefficient , then the array received data at time t can be expressed as

where: is the array received data; is the array oriented vector and λ is the signal wavelength; is the array manifold, is the decay coefficient matrix; is the source signal; is the mutual independent, zero-mean smooth noise with the same power . The array covariance matrix is expressed as

where: is the source signal s(t) autocorrelation matrix and is the N-dimensional unit matrix.