List of Symbols

Symbol	Description
N	Number of base station antennas
N_{stp}	Number of steps
N_c	Number of clusters
K	Number of mobile terminals in a cell
T	Number of symbols in a resource block
B	Bandwidth of signal
L	Number of cells in the system
M	Modulation order
C	Number of iterations of an algorithm
β	Average channel gain from mobile terminal to base station
t^b	Index of a resource block over time
f^b	Index of a resource block over frequency
T^b	Total number of resource blocks over time
F^b	Total number of resource blocks over frequency
$\mathbf{G}$	Overall channel matrix
$\mathbf{g}_i$	i^{th} column vector of $\mathbf{G}$
g_{ij}	$(ij)^{th}$ entry of $\mathbf{G}$
$\mathbf{H}$	Small scale fading channel matrix
$\mathbf{h}_i$	i^{th} column vector of $\mathbf{H}$
h_{ij}	$(ij)^{th}$ entry of $\mathbf{H}$
$\tilde{\mathbf{H}}_{PBE}$	Pilot based estimate of small scale fading channel matrix
$\mathbf{D}$	large scale fading plus path loss channel matrix
$\circ$	Hadamard product
$\mathbb{CN}$	Circulary symmetric complex normal distribution
Σ	Covariance matrix
$\sum_{j=1}^{K}$	Summation from $j = 1$ to $j = K$
α_b	Correlation between channel matrices of consecutive resource blocks
α_e	Correlation between estimated channel matrix of current resource blocks and actual channel matrix of previous resource block
$\mathbb{V}ar$	Statistical variance
$\mathbb{C}orr$	Correlation
$\triangleq$	Defined as
$\mathbb{E}$	Mathematical expectation
γ	Transmit power scaling factor
ε	A fraction of unity
τ	Pilot length
$\mathbf{S}$	Power scaling factor matrix
tr	Trace of a matrix
p_u	Measure of common transmit power
ρ	Measure of inter-cell interference power
$\mathbf{W}$	Additive white Gaussian noise matrix
$\mathbf{I}$	Identity matrix

Symbol	*Description*
$\mathbf{y}$	Signal vector $(N \times 1)$ at N antennas of base station
$\mathbf{Y}$	Signal matrix $(N \times T)$ at N antennas of base station for T channel usage
$< . >^{T}$	Transpose of $< . >$
$< . >^{H}$	Hermitian transpose of $< . >$
$< . >^{\dagger}$	Pseudo inverse of $< . >$
$< . >^{*}$	Complex conjugate of $< . >$
$\| < . > \|$	Frobenius norm of $< . >$
g_{ij}, h_{ij}	(ij)th entry of matrix $\mathbf{G}$, $\mathbf{H}$