



Term	Description	Unit
$p_i$	False positive rate (FPR) for filters at level $i$	
$R$	Worst-case zero-result point lookup cost	I/O
$R_{\text{filtered}}$	Worst-case zero-result point lookup cost to levels with filters	I/O
$R_{\text{unfiltered}}$	Worst-case zero-result point lookup cost to levels with no filters	I/O
$V$	Worst-case non-zero-result point lookup cost	I/O
$W$	Worst-case update cost	I/O
$Q$	Worst-case range lookup cost	I/O
$M_{\text{threshold}}$	Value of $M_{\text{filters}}$ below which $p_L$ (FPR at level $L$ ) converges to 1	bits
$\phi$	Cost ratio between a write and a read I/O to persistent storage	
$s$	Proportion of entries in a range lookup	
$L_{\text{filtered}}$	Number of levels with Bloom filters	
$L_{\text{unfiltered}}$	Number of levels without Bloom filters	
$\hat{M}$	Amount of main memory to divide among filters and buffer	bits