



	ESVQ	TSVQ	RVQ
# data points	$N$	same	same
Vertical dimension, $P$	-	depth	# stages
Horizontal dimension, $M$	-	breadth	# code-vectors/stage
Encoding indeces	-	path map	p-tuple
Input dimension	$D$	same	same
Total codevectors, $K$	$2^{rD}$	$2^{rD} = M^P$	same as TSVQ
Rate, $r$ (bits/vector component)	$(\log_2 K)/D$	same	same
# total vectors (test+terminal)	$2^{rD}$	$M N_n = M \frac{M^P - 1}{M - 1} \approx \frac{M}{M - 1} M^P$	$M P + M^P \approx M^P$
# non-terminal nodes, $N_n$	0	$\frac{M^P - 1}{M - 1}$	$M P$
computations: search ops/stage	1 stage, $O(2^{rD})$	$M$	same as TSVQ
computations: search complexity	$O(2^{rD})$	$O(M P)$	same as TSVQ
memory	$2^{rk}$	$M N_n = M \frac{M^P - 1}{M - 1} \approx \frac{M}{M - 1} M^P$	$M P$
# Input data at stage $p$	1 stage, $N$	data starvation $\frac{N}{M^p}$	$N$