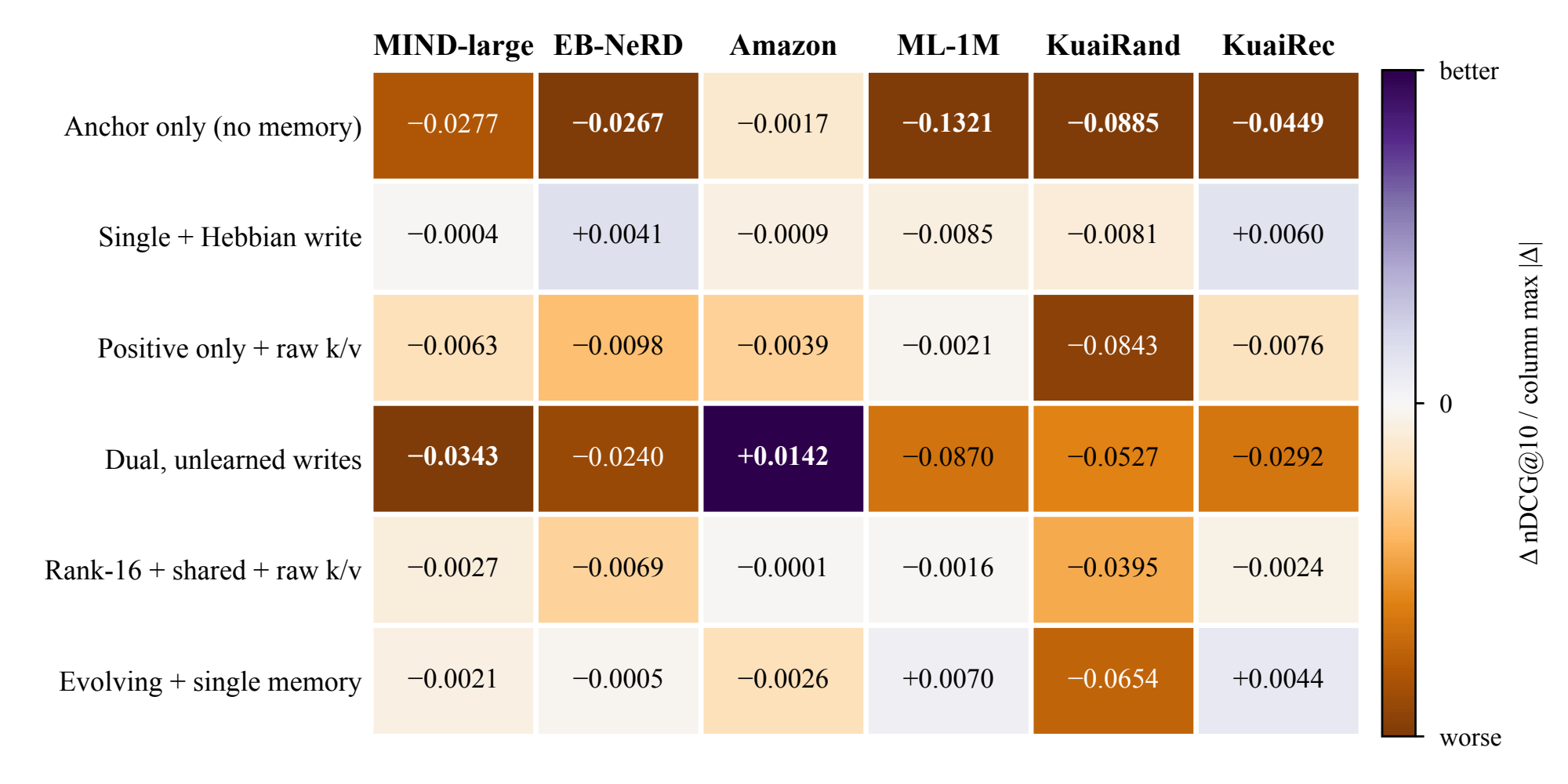

MIND-large
EB-NeRD
Amazon
ML-1M
KuaiRand
KuaiRec
Anchor only (no memory)
−0.0277
−0.0267
−0.0017
−0.1321
−0.0885
−0.0449
Single + Hebbian write
−0.0004
+0.0041
−0.0009
−0.0085
−0.0081
+0.0060
Positive only + raw k/v
−0.0063
−0.0098
−0.0039
−0.0021
−0.0843
−0.0076
Dual, unlearned writes
−0.0343
−0.0240
+0.0142
−0.0870
−0.0527
−0.0292
Rank-16 + shared + raw k/v
−0.0027
−0.0069
−0.0001
−0.0016
−0.0395
−0.0024
Evolving + single memory
−0.0021
−0.0005
−0.0026
+0.0070
−0.0654
+0.0044
better
0
worse
Δ nDCG@10 / column max |Δ|