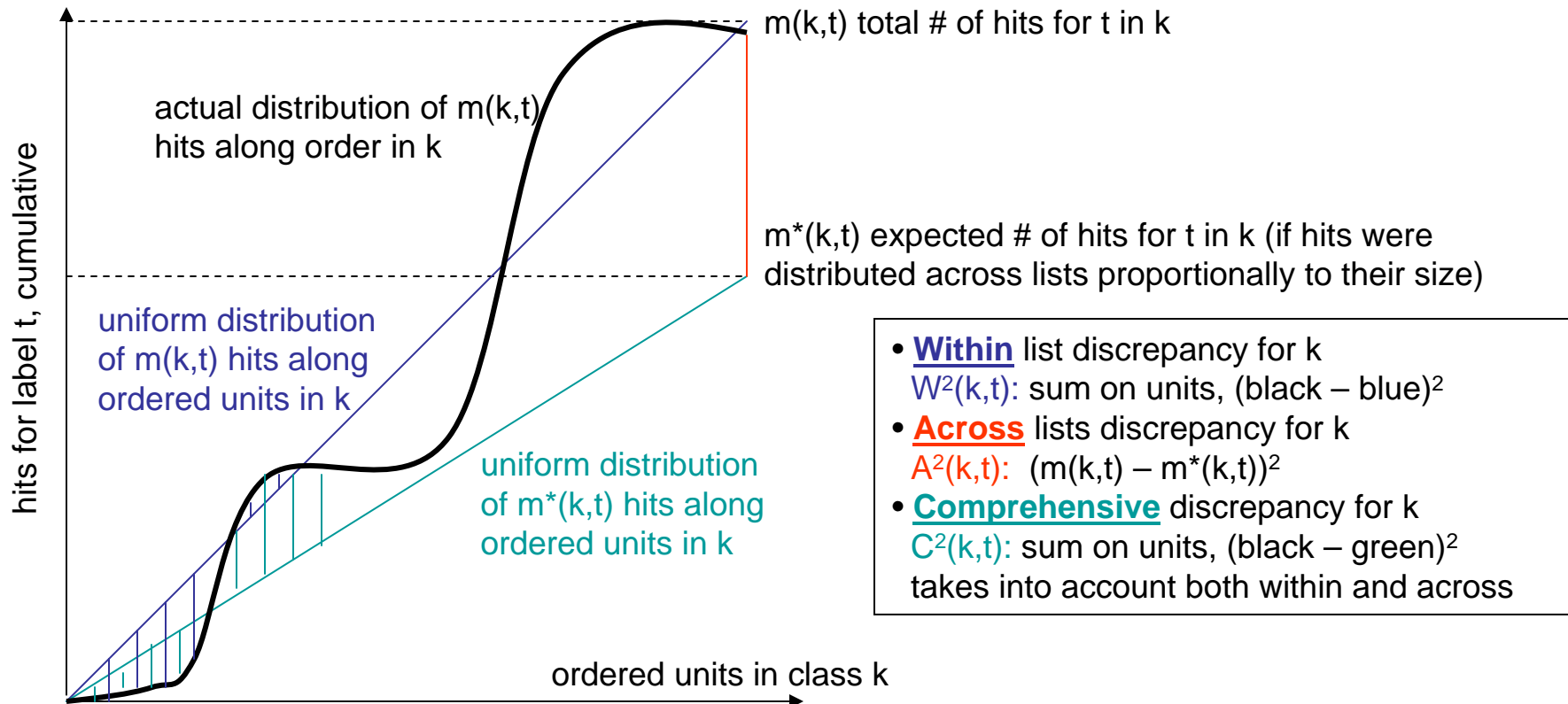


For each list k, separately



Then adding on all lists $k=1 \dots K$ (no order required among them)

- TOT Within lists discrepancy $W^2(t)$: sum on k, $W^2(k,t)$.

can simulate p-value randomizing unit order within each list, separately

- TOT Across lists discrepancy $A^2(k)$: sum on, k $A^2(k,t)$.
- TOT Comprehensive discrepancy $C^2(k)$: sum on k, $C^2(k,t)$.

can simulate p-values randomizing unit order globally after stacking the lists (in any order). For total across discrepancy, $A^2(k)$ indeed resembles a chi-square type statistic – although here we simulate the p-value.