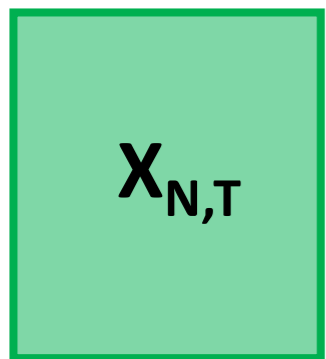


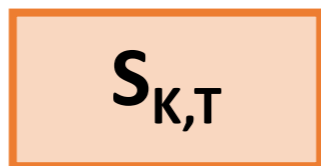
A**SNMF model**

Mutational Profiles

Exposures

 \approx  \times

Signatures

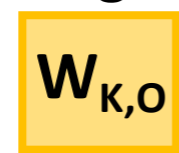
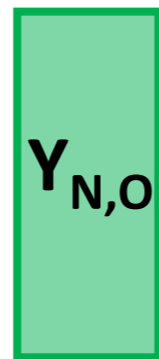
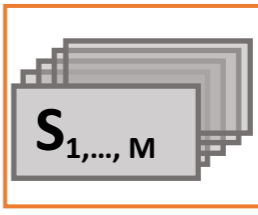
 λ_c : Integration Strength

Labels

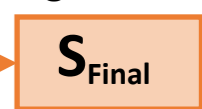
softmax



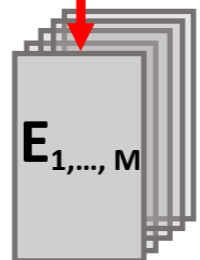
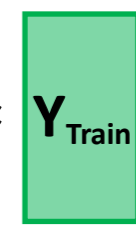
Weights

 \times  \approx **B**Train SNMF M times \approx  \times  \rightarrow

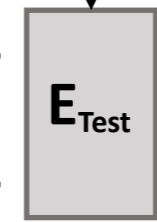
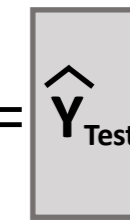
Cluster Signatures

Re-train SNMF with fixed S_{final} to find W_{final}

softmax

 \times  \approx **C**Estimate E and Y for test data with fixed S_{final} and W_{final}  \approx  \times 

softmax

 \times  $=$  \approx 