Multi-ARTM

How to incorporate tokens of additional modalities?

PLSA:
$$\mathcal{L} = \sum_{d \in D} \sum_{w \in W} n_{dw} \log \sum_{t \in T} \phi_{wt} \theta_{td} \to \max_{\Phi, \Theta}$$

Multi-ARTM:
$$\sum_{m \in M} \lambda_m \sum_{d \in D} \sum_{w \in W^m} n_{dw} \log \sum_{t \in T} \phi_{wt} \theta_{td} \to \max_{\Phi, \Theta}$$

- Each topic is characterized by several probability distributions
- More parameters, still trained with EM-algorithm