**Dynamic Topic Models**

**Goal**: development of a dynamic topic model which captures the evolution of topics in a sequentially organized corpus of documents.

Unlike Latent Dirichlet Allocation (LDA), which assumes documents are generated from a fixed set of topics and ignores temporal order, Dynamic Topic Models (DTM) introduce a sequential structure: topics in each time slice evolve smoothly from the topics of the previous slice.

A study was conducted to compare the predictive performance of three 20-topic models for yearly articles:

* Dynamic topic model using all previous years
* Static topic model
* Static topic model using only the previous year

The dynamic and full-data topic model consistently achieved higher likelihood for the next year’s articles than the other models. Dynamic topic models not only improve prediction but also provide new ways to navigate large, unstructured document collections.