Structural or analytic derivation

This coordinate proof is independent of diagonalizing the transition matrix. The same linearity extends to any finite convex mixture of fixed-operator topic profiles.

Comparative cost and preferred method

For k precomputed topics, one requested coordinate costs $O(k)$ arithmetic and the full N-coordinate vector costs $O(kN)$. Computing a separate stationary system for every mixture is redundant. Basis construction and storage kN remain part of the total cost.