

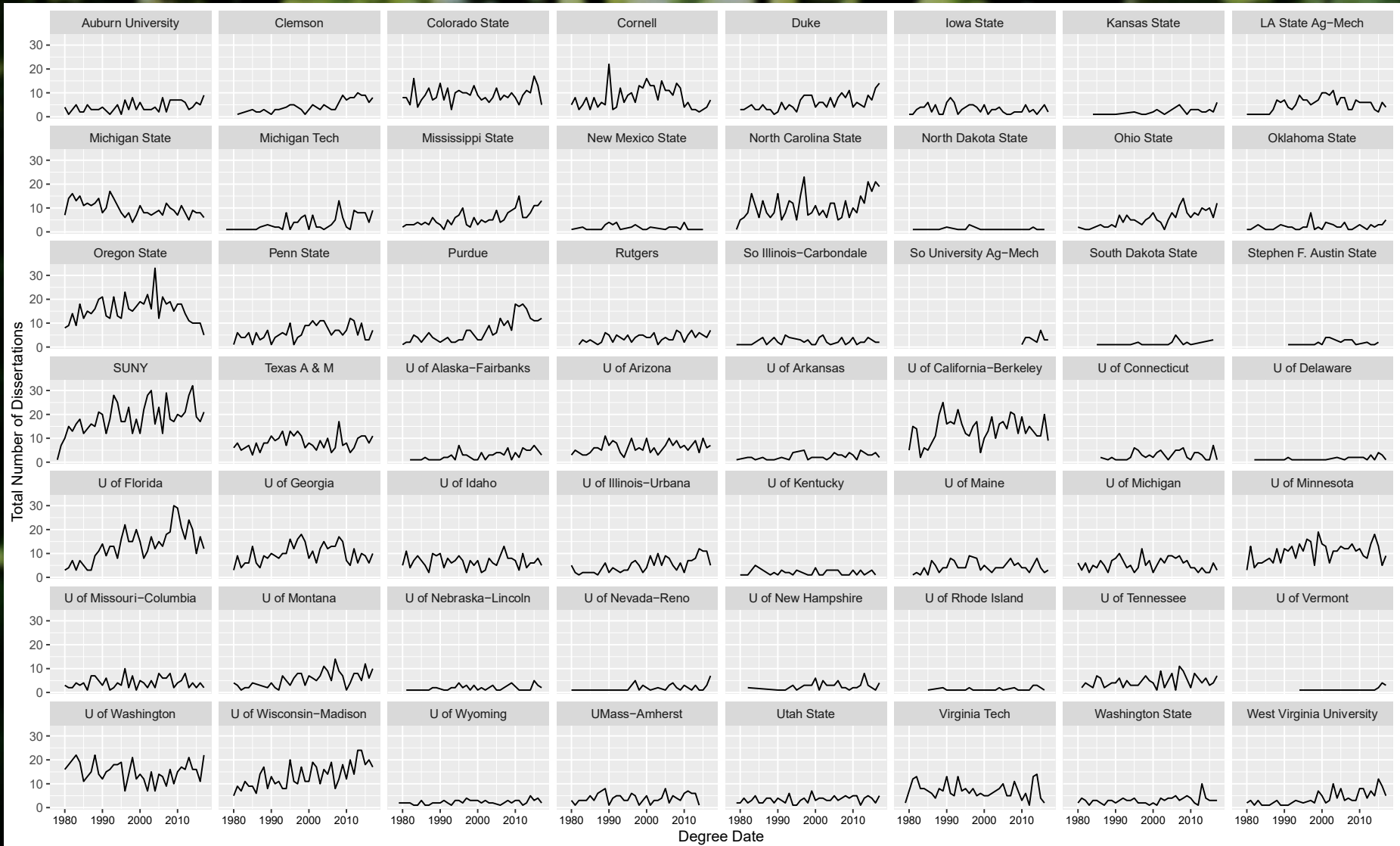


Trends in Forest Research Expertise Over Four Decades

Trends in Forest Research Expertise

- PhD dissertations from NAUFRP institutions identified using ProQuest and supplemented library databases.
- Identified 11,530 PhD dissertations published from 1955 to 2019 that included keywords “forest,” “forests,” “forestry,” “silviculture,” “wood technology,” or “wood science” in the dissertation title or abstract.
- Usable data available from 1979 to 2017.
- Automated Content Analysis (ACA) using predictive topic modeling R package for natural language processing (topicmodels).

Dissertations by NAUFRP University



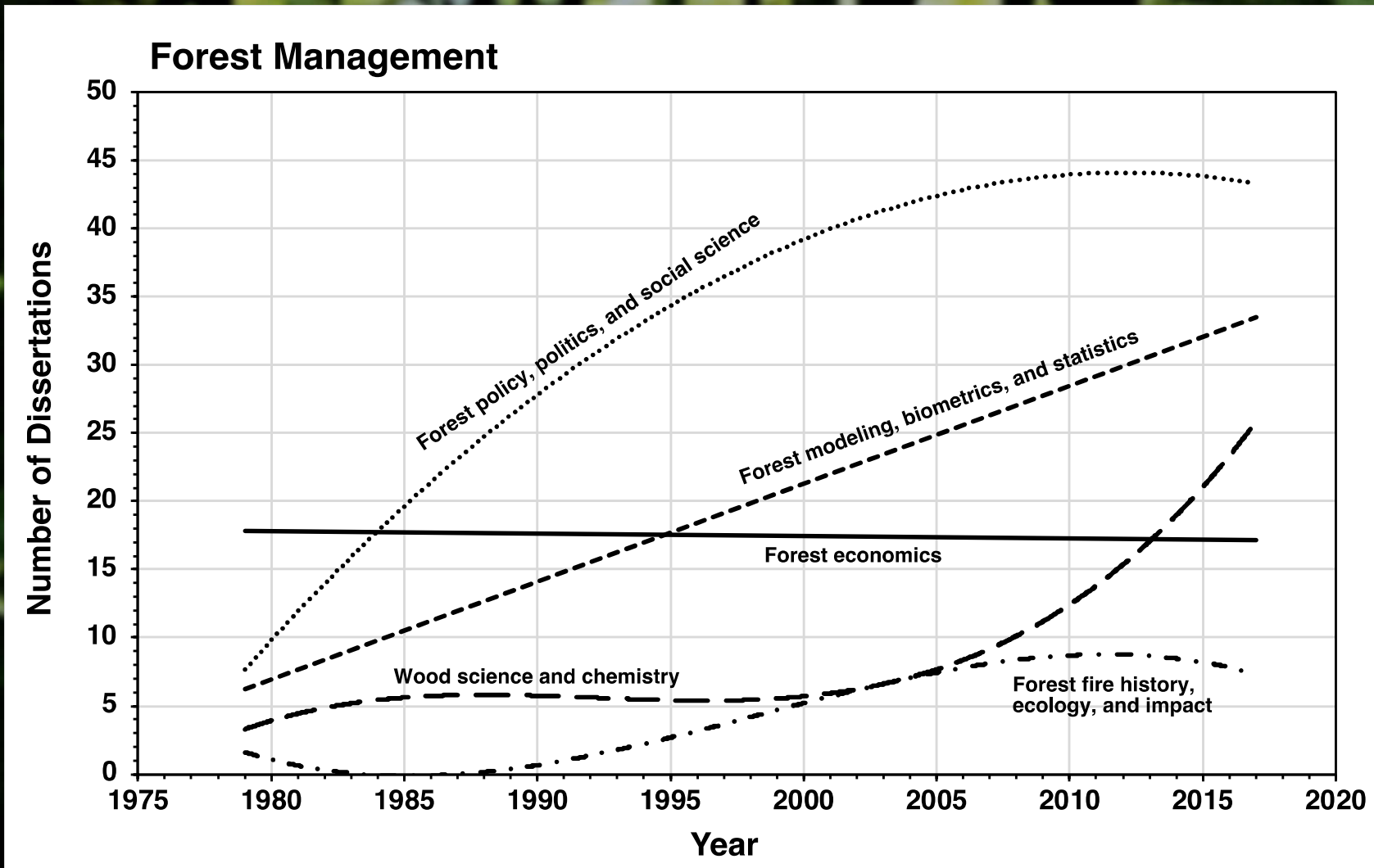
Trends in Forest Research Expertise

- **Optimal number of topics developed using iterative process that tested 6, 12, 20, 24, and 50 topic groupings.**
- **Optimal number of topics was 20.**
- **Dissertations were assigned to each topic based on strength of fit ($\gamma > 0.5$).**
- **Final analysis included 7,742 dissertations from 1979 to 2017.**

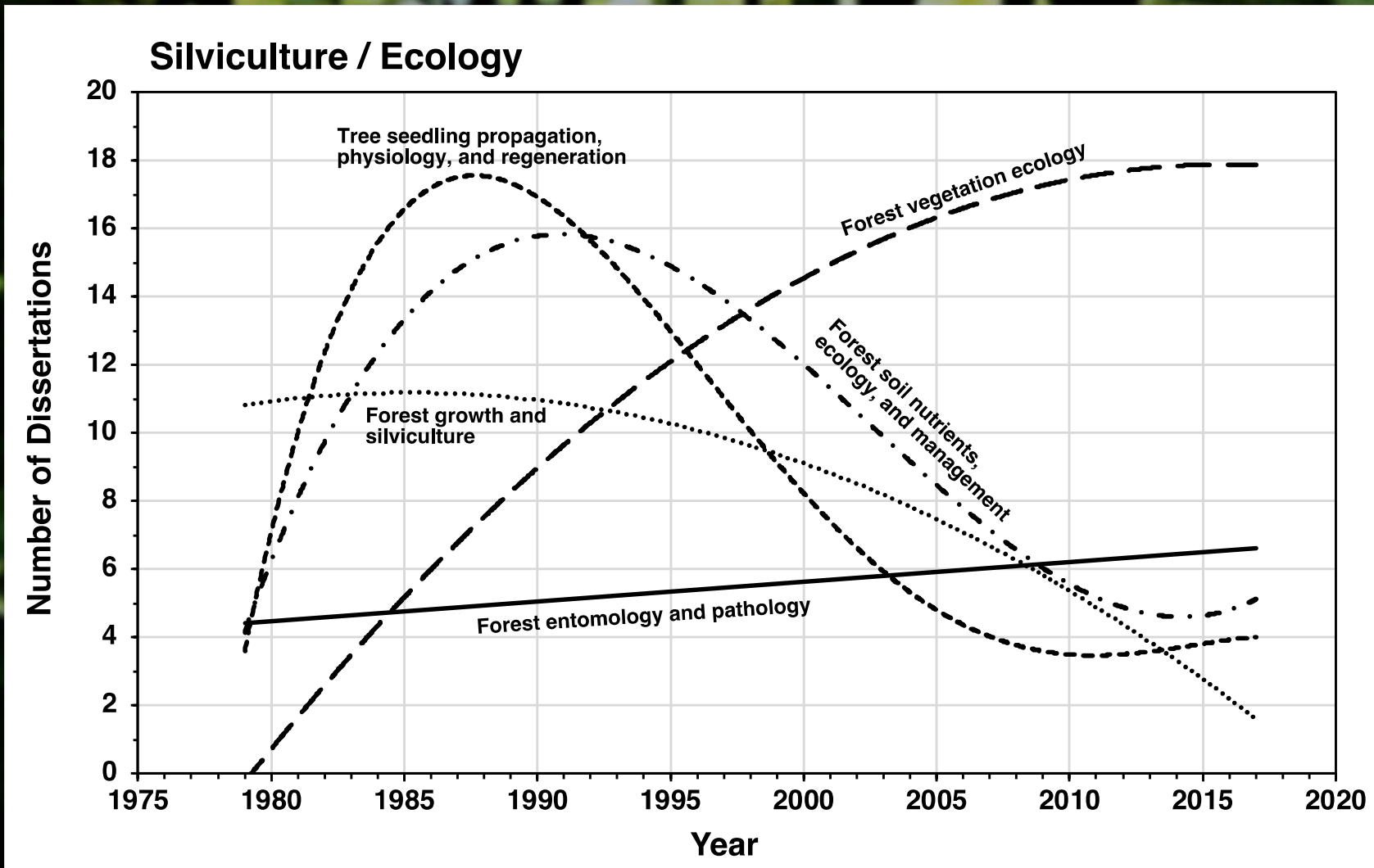
20 Topics Grouped into Four Themes

| Forest Management | Silviculture / Ecology | Forest Wildlife | Supporting Sciences |
|--|--|---|---|
| Forest economics | Forest entomology and pathology | Ungulates, carnivores, and livestock | Wetland ecology |
| Forest policy, politics, and social science | Forest growth and silviculture | Population ecology | Watersheds and hydrology |
| Forest modeling, biometrics, and statistics | Tree seedling propagation, physiology, and regeneration | Fish and aquatic ecology | Climate and landscape change |
| Wood science and chemistry | Forest vegetation ecology | Avian ecology | Genetics and systematics of plant and animal populations |
| Forest fire history, ecology, and impact | Forest soil nutrients, ecology, and management | Foraging and habitat ecology | Forest soils and atmospheric science |

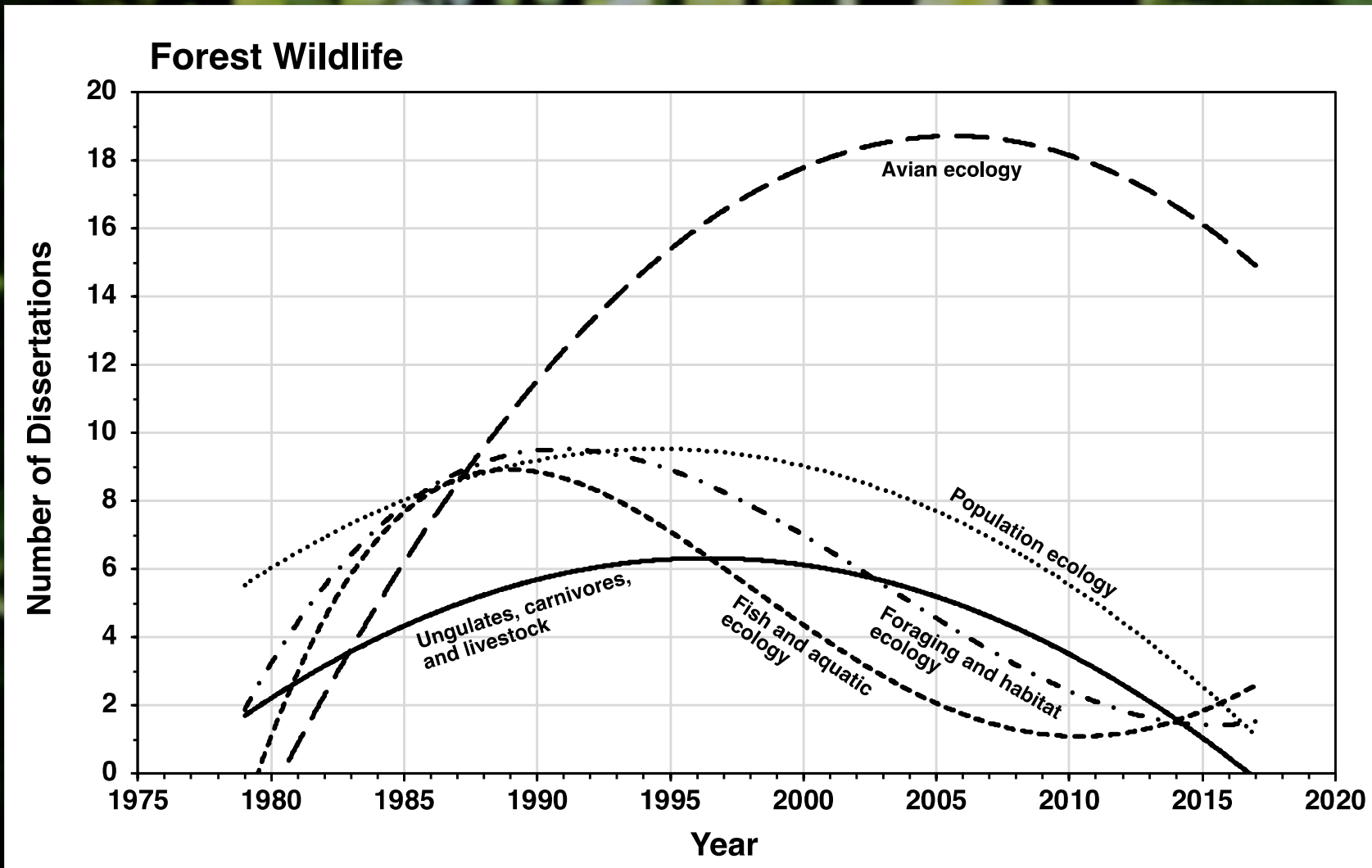
Four-Decade Trends by Topic



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