

Visualization of bibliometric networks using VOSviewer

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Outline

- Software for visualizing bibliometric networks
- Introduction to VOSviewer
- Applications
 - Analyzing the research profile (activity and impact) of an institute
 - Analyzing the structure and evolution of a scientific domain



Software for visualizing bibliometric networks

- SPSS
- Pajek (and other social network analysis programs)
- CiteSpace
- Network Workbench Tool
- BibTechMon
- VOSviewer

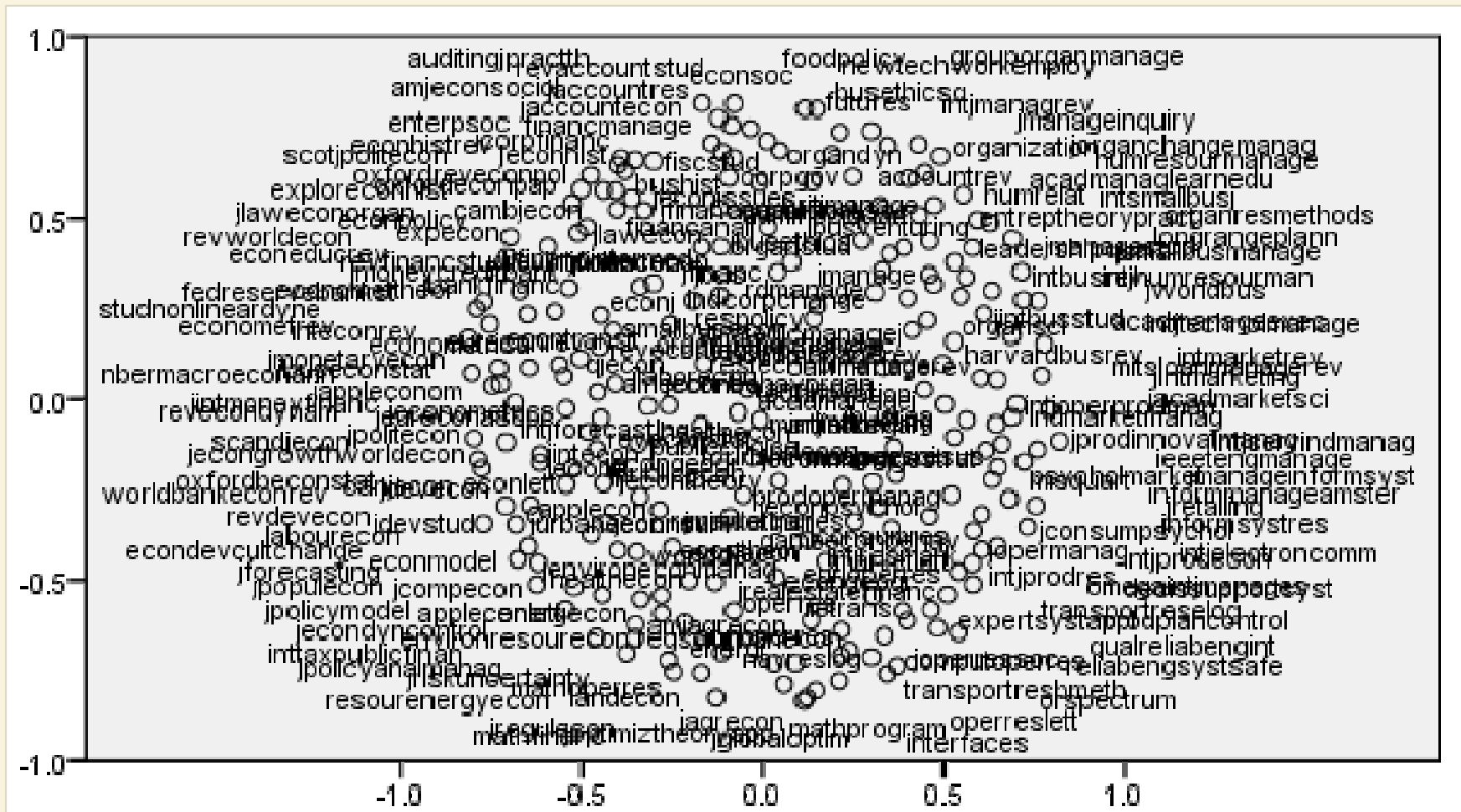


Example: Visualizing a journal network based on co-citations

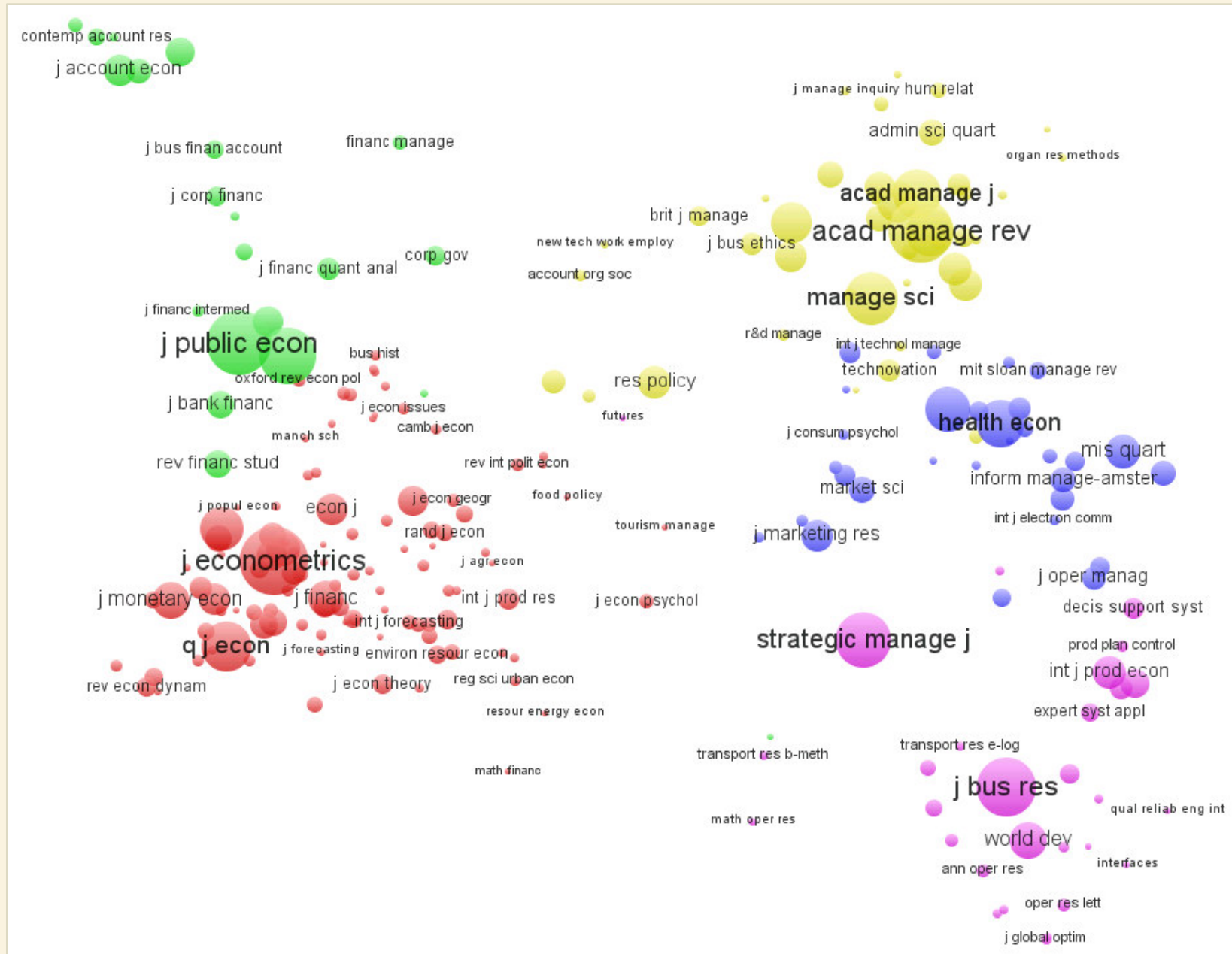
- WoS subject categories:
 - Business
 - Business, Finance
 - Economics
 - Management
 - Operations research & management science
- 232 journals



SPSS output



VOSviewer output



VOSviewer

1. Tool for constructing maps

- Uses the VOS mapping and clustering techniques to construct maps of bibliometric networks

2. Viewer for exploring maps

- Provides various different views of a map
- Provides zoom, scroll, and search functionality
- Uses a special algorithm to take care of overlapping labels



VOSviewer demonstration

- Construction of maps
- Views
- Functionality
- Options

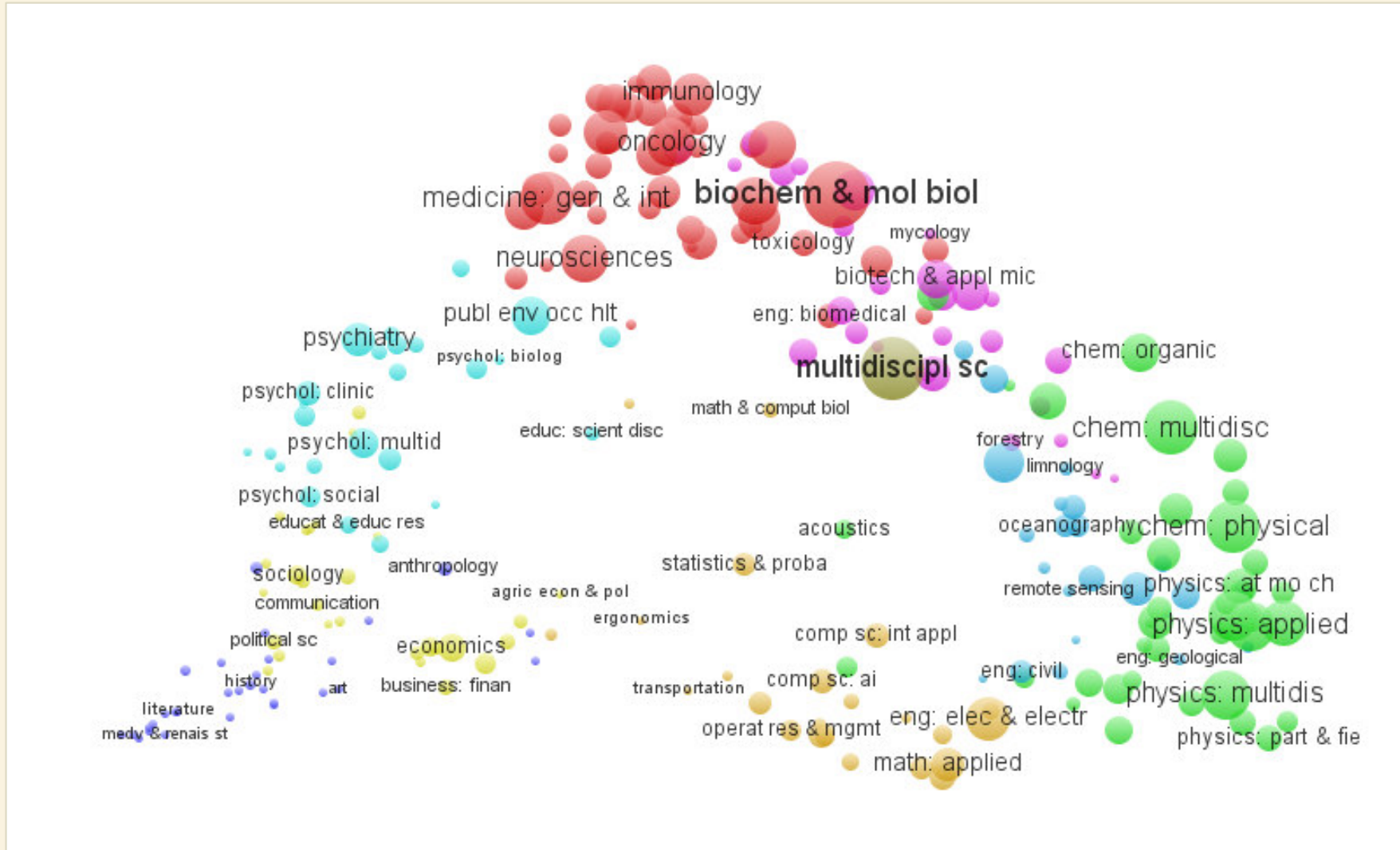


Application 1: Analyzing the research profile of an institute

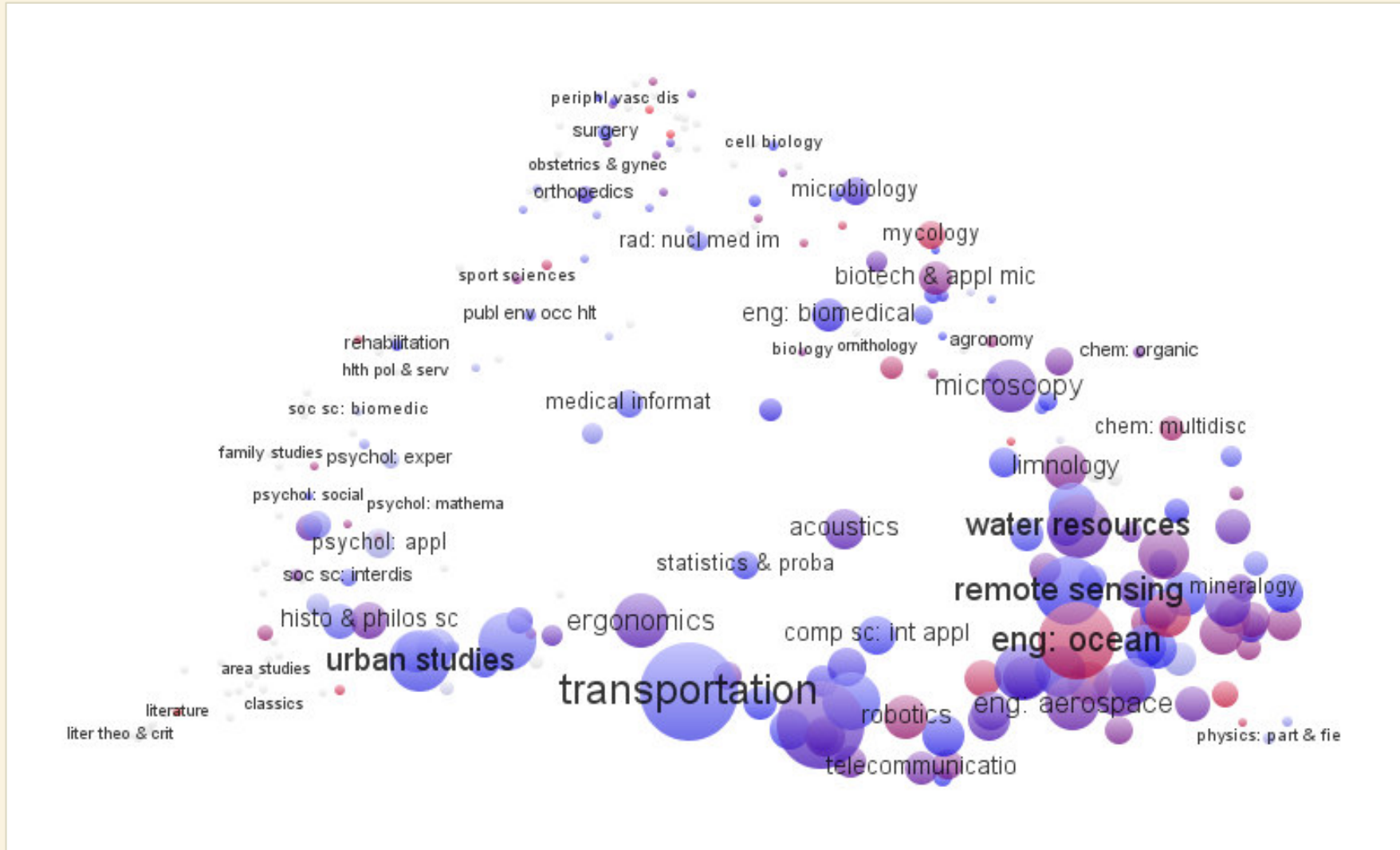
- Visualization of the activity and the impact of an institute
- Map of a network of WoS subject categories based on co-citations
- Each category is indicated by a circle
 - Size: activity
 - Color: impact



WoS subject category network



Research profile Delft University of Technology

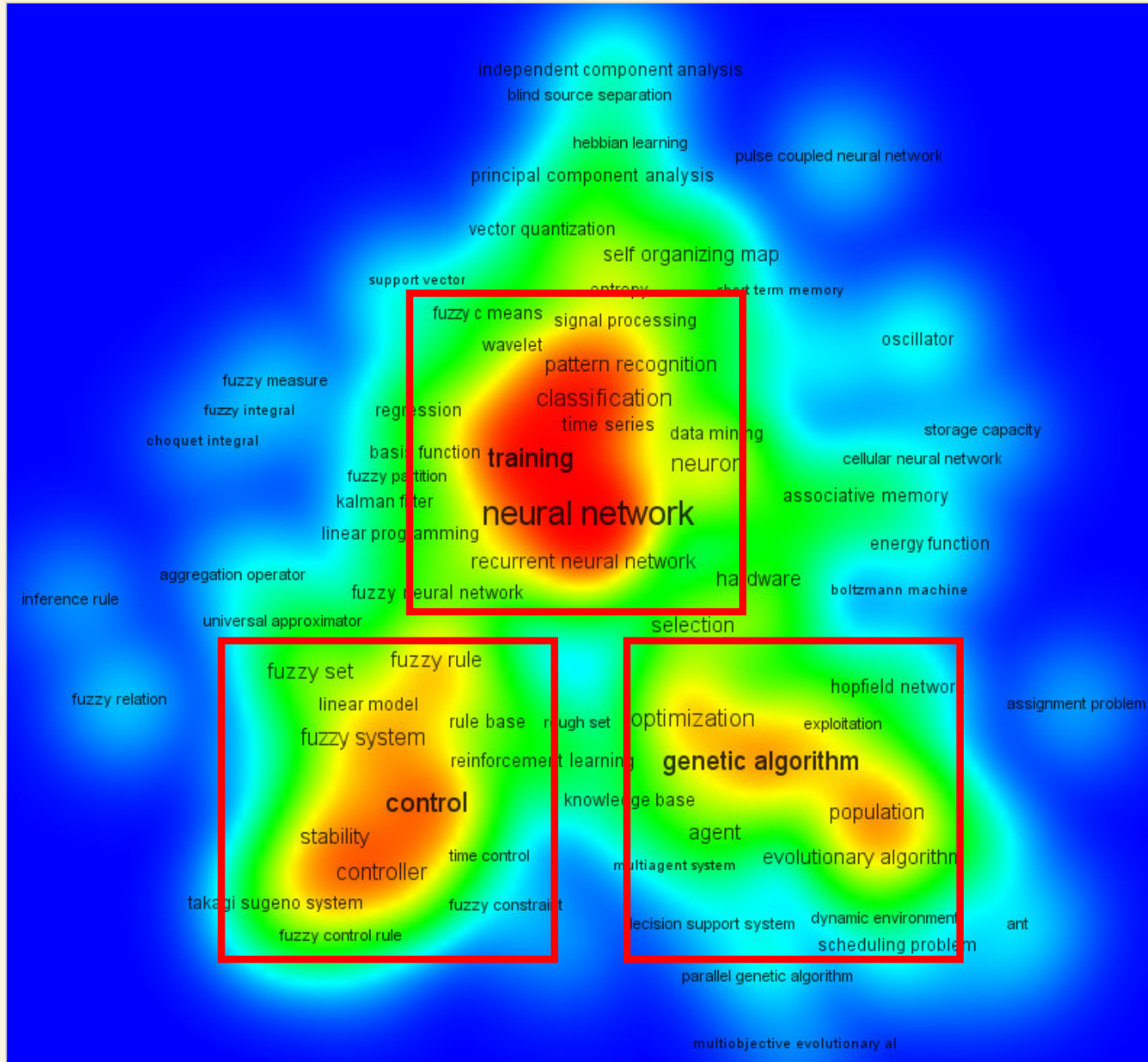


Application 2: Analyzing the structure and evolution of a scientific domain

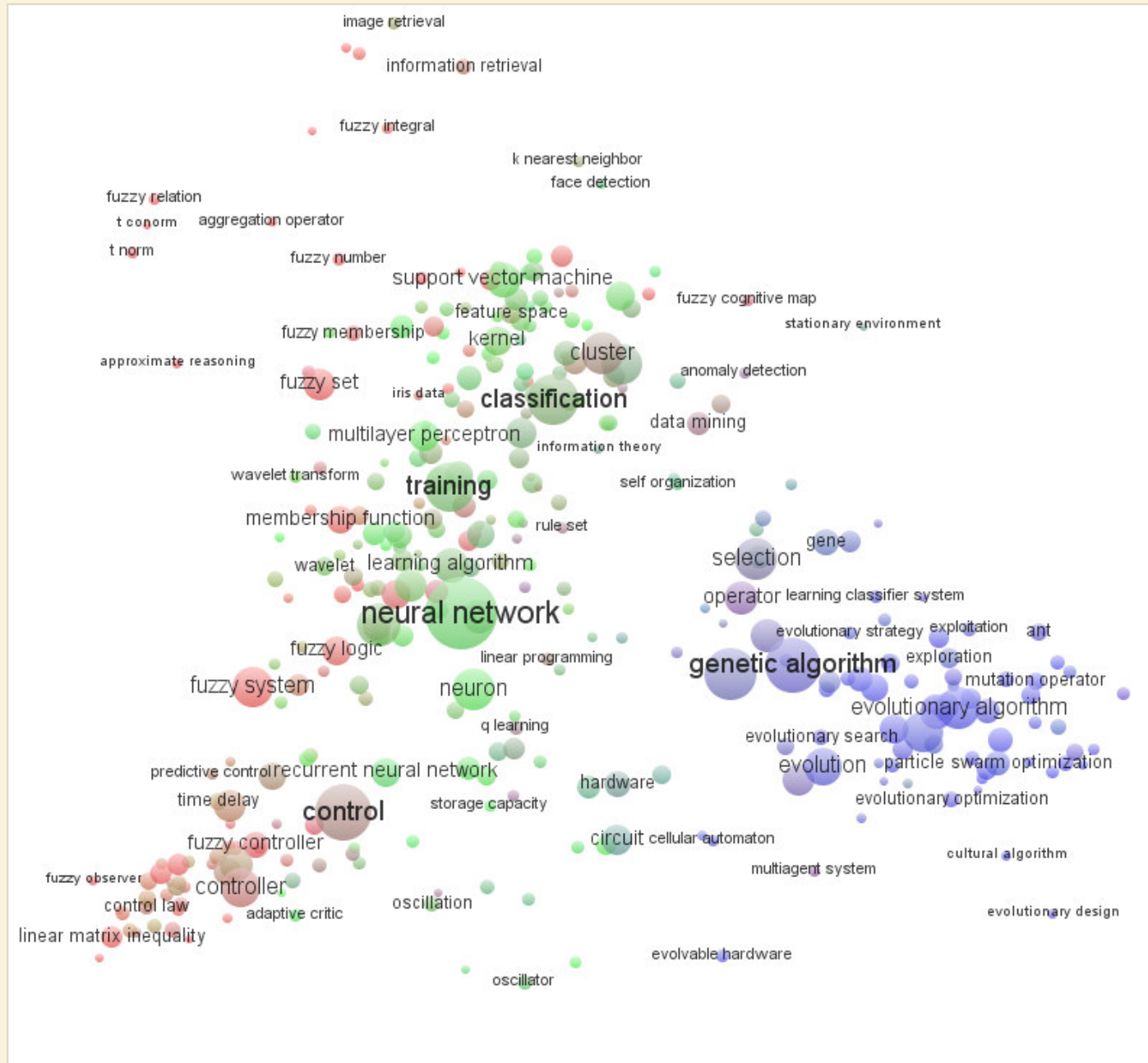
- Computational intelligence (CI) field
 - Neural networks
 - Fuzzy systems
 - Evolutionary computation
- 13000 abstracts from 3 journals and 3 conferences
- 330 terms



Structure of the CI field 1996-2000 (2)



Structure of the CI field 2001-2005 (1)



VOSviewer website

www.vosviewer.com

- Download and run VOSviewer
- Examples of maps
- Publications

