

知识科学图谱工具

——CiteSpace的利用方法简介

吴育冰

图书馆信息咨询部

QQ: 1539262507

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一、CiteSpace软件概述

软件介绍
主要功能
术语释义

软件介绍

- 由**陈超美教授团队**开发和运营升级的一款知识图谱分析工具，旨在通过可视化的手段来呈现科学知识的结构、规律和分布情况，适合进行多元、分时、动态复杂网络分析的**免费可视化知识分析工具**。
- CiteSpace将**可视化方法**、**文献计量方法**和**数据挖掘算法**集成起来，是一个引文数据中提取模式的交互式的可视化工具，其绘制图谱、建立结点之间关联的依据是“**共引**”和“**引文**”。

- **陈超美** (Chaomei Chen), 男, 1960年9月生于中国北京, 英籍华人, 现为美国德雷塞尔大学 (Drexel University, Philadelphia) 信息科学与技术学院副教授 (终身教职)、大连理工大学长江学者讲座教授、Drexel - DLUT知识可视化与科学发现联合研究所所长。
- 当代信息可视化与科学知识图谱学术领域中的权威专家之一。



- **应用领域：** 适用于各个领域，国内主要集中在图情档、管理科学与工程及教育学方面；
- **发展历程：** 2004年开始利用其开发的软件CiteSpace
 2011年7月发布CiteSpace 2.2 R11版本
 2012年7月发布适合64位的版本

Date	Version*	Download <i>CiteSpace</i>	Download <i>Java JRE</i>	Notes
March 9, 2018	5.2.R1	7z	64-bit / Windows x64	Require Java 8
October 27, 2017	5.1.R8 SE	7z	64-bit / Windows x64	Require Java 8
August 1, 2017	5.1.R6 SE	7z	64-bit / Windows x64	Require Java 8
July 5, 2017	5.1.R5 SE	7z	64-bit / Windows x64	Require Java 8
June 27, 2017	5.1.R4 SE	7z	64-bit / Windows x64	Require Java 8
June 10, 2017	5.1.R3 SE	7z	64-bit / Windows x64	Require Java 8
June 8, 2017	5.1.R2 SE	7z	64-bit / Windows x64	Require Java 8
June 2, 2017	5.1.R2 SE	7z	64-bit / Windows x64	Require Java 8
May 23, 2017	5.1.R2 SE	7z	64-bit / Windows x64	Require Java 8

CiteSpace • 主要功能

1 研究**热点和前沿**分析——**聚类图**

A: 重要学科领域分析（以术语和学科主题作为网络节点）学科领域分布图

B: 研究前沿的知识基础分析（以参考文献作为共引分析节点）

基于文献共被引的网络知识图谱

C: 研究热点分析（关键词作为网络节点）

基于关键词共现的网络知识图

2 考察科学技术领域**代表人物与合作网络**

基于作者共引分析，形象地展示作者合作网络，分析作者之间合作的网络，挖掘作者合作的地域分布与合作动因等深层问题。

3 研究**前沿与发展趋势**分析——**时序图**（timeline、timezone）

4 实现**文献计量与地理地图**的整合（GoogleEarth）

术语释义

➤ 可视化 (Visualization)

- 数据、信息、知识——视觉形式
- 数据内部的特征、规律
- 观察力、记忆力、理解力
- 形成整体概念

术语释义

- 知识图谱 (Knowledge Map/Science Mapping等)
 - 图书情报领域——知识域可视化、知识领域映射地图
 - 可视化技术——知识资源、载体
 - 相互联系
 - 展示学科的核心结构、发展历史、前沿领域、整体知识结构

术语释义

➤ 突现词 (Burst Terms)

- 通过词频，将某段时间内其中频次变化率高的词从大量的主题词中探测出来。

术语释义

▶ 被引 (Cited)

某一文献被其他文

假设：文章A、文章B；

不考虑文章A是否是来源文献

若：文章A被文章B引用

则：文章A → 被引文献；

文章B → 施引文献；

A和B——引证关系。

术语释义

➤ 共引（同引）

是指两篇文献同时被别的文献引用。

意义：

- 利用共引分析以提供分析对象之间由引文关系形成的相对位置信息和相互关系的亲疏程度，
- 对这些信息用学科专业知识加以解释和分析判断，可以揭示研究对象的规律，预测其发展趋势。

术语释义

► 共词分析

通过分析在同一个文本主体中的款目对(单词或名词短语对)共同出现的形式, 以发现科学领域的学科结构的定量分析方法。

意义:

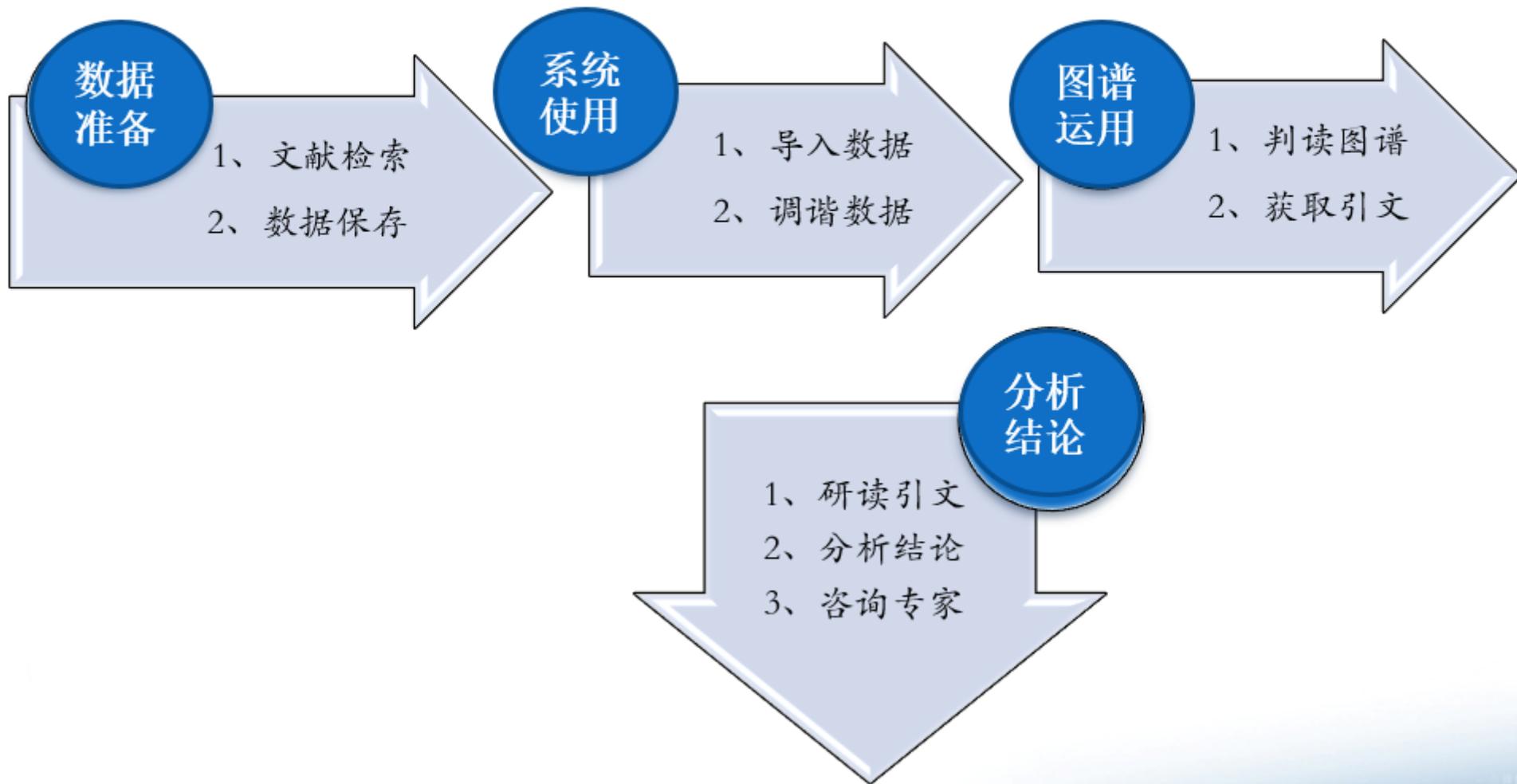
- 根据某时期文献中词汇的共现信息确定研究领域的主题, 揭示文本所代表的学科领域中主题间的关系。
- 在一系列的时间区间里进行比较, 可以发现学科的发展变化趋势。

二、使用步骤

运行环境与安装
确定主题
数据准备
可视化设置

CiteSpace • 使用步骤 Process

CiteSpace 使用



CiteSpace·使用步骤Process

1、运行环境与下载安装

- CiteSpace 5.1.R1 所需的运行环境是64位的Windows操作系统，并且需要安装Java 8运行环境
- 下载解压后，双击CiteSpaceV打开软件，点击“Agree”
- 注：CiteSpace需要在JAVA环境下才能运行

- 下载

下载地址: <http://cluster.ischool.drexel.edu/~cchen/citespace/download/>

下载页面:

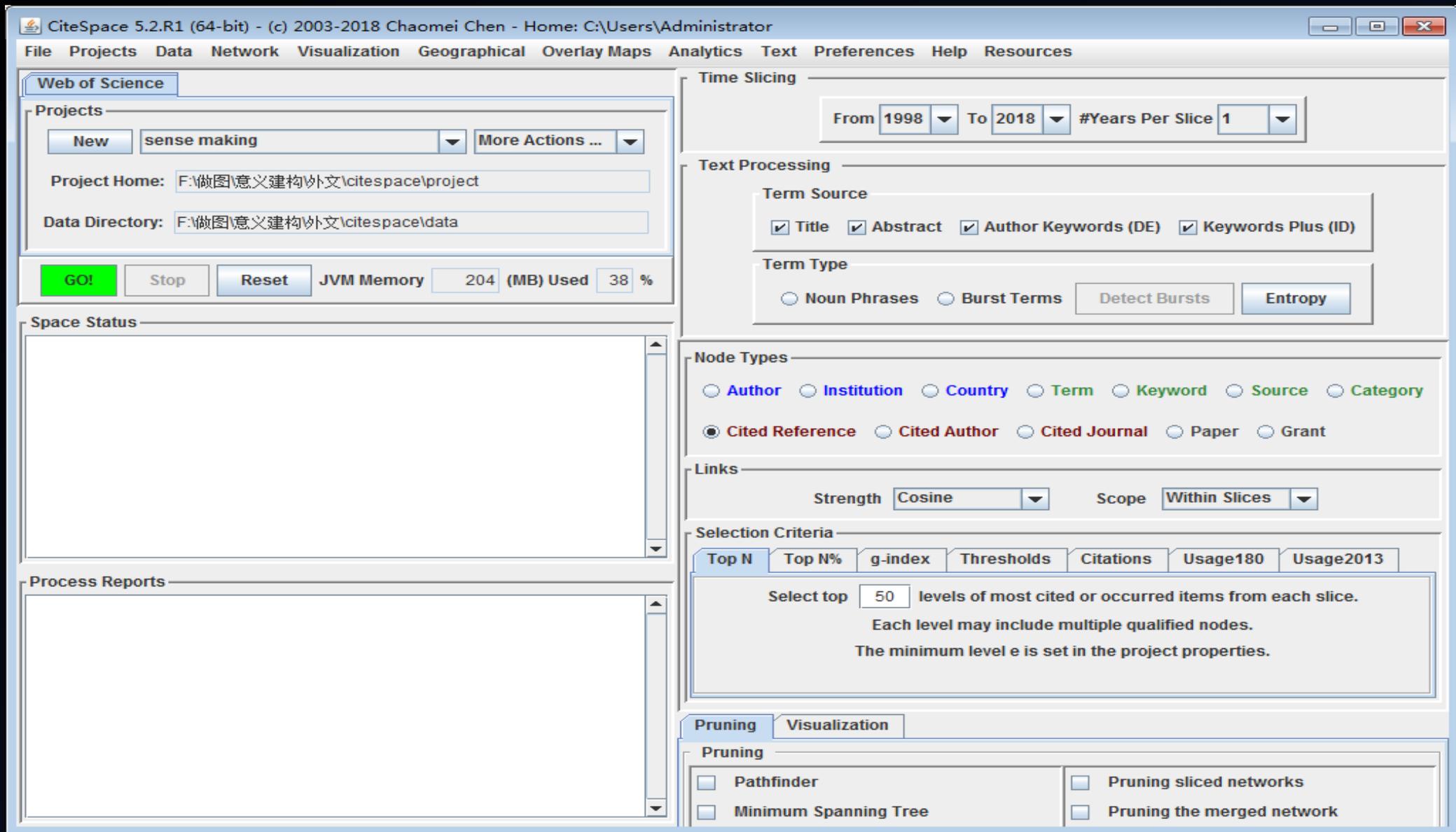
***CiteSpace*: Visualizing Patterns and Trends in Scientific Literature**
Chaomei Chen

See [CiteSpace101](#) for more!



Click on DOWNLOAD to get the software and the corresponding JRE

Date	Version*	Download <i>CiteSpace</i>	Download <i>Java JRE</i>	Notes
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October 27, 2017	5.1.R8 SE	7z	64-bit / Windows x64	Require Java 8
August 1, 2017	5.1.R6 SE	7z	64-bit / Windows x64	Require Java 8
July 5, 2017	5.1.R5 SE	7z	64-bit / Windows x64	Require Java 8
June 27, 2017	5.1.R4 SE	7z	64-bit / Windows x64	Require Java 8



2、确定主题

- 运用尽可能广泛的专业术语来确定一个待分析的知识领域，确保接下来的分析能涵盖一个知识领域的全部内容。

3、数据准备

- 将确定专业术语编成检索式，从数据库中检索出符合要求的文献数据，下载到本地，创建项目
- CiteSpace数据源：

外文数据库	是否转换	中文数据库	是否转换
Web of science	否	CNKI	是
Pubmed	是	CSSCI	是
Scopus	是		
Derwent专利	是		
arXiv	否		

- 需要转换的数据源存放的文件里建立4个子文件：data、project、input、output（其中，output的数据复制到data）
- 不需要转换的数据源只需要在文件里建立2个子文件：data、project

2018年-citespace培训 ▸ CSSCI ▸

刻录 新建文件夹

名称	修改日期	类型
data	2018/3/27 17:58	文件夹
input	2018/3/27 17:58	文件夹
output	2018/3/27 17:59	文件夹
project	2018/3/27 17:58	文件夹

2018年-citespace培训 ▸ WoS ▸

刻录 新建文件夹

名称	修改日期	类型
data	2018/3/27 17:58	文件夹
project	2018/3/27 18:03	文件夹

(1) Web of Science数据采集

step1: 登录WoS, 选择“Web of Science 核心合集”

The screenshot displays the Web of Science search interface. At the top, there is a navigation bar with links for 'Web of Science', 'InCites', 'Journal Citation Reports', 'Essential Science Indicators', 'EndNote', 'Publons', and a user ID '1539262507@qc'. Below this is the 'Web of Science' logo and a search bar. The search bar contains the text 'Web of Science 核心合集', which is highlighted with a red box. To the right of the search bar is a '进一步了解' (Learn More) link. Below the search bar, there is a dropdown menu with the following options: '所有数据库' (All Databases), 'Web of Science 核心合集' (Web of Science Core Collection), '中国科学引文数据库 SM' (China Science Citation Index SM), 'KCI-韩国期刊数据库' (KCI-Korea Journal Database), 'MEDLINE ©', 'Russian Science Citation Index', and 'SciELO Citation Index'. A '进一步了解' (Learn More) link is also present at the bottom of the dropdown menu. To the left of the search bar, there is a '选择数据库' (Select Database) label. Below the search bar, there are several search filters: '基本检索' (Basic Search), '被引' (Cited), '示例: oil spill* m' (Example: oil spill* m), 'AND' (Boolean operator), '示例' (Example), '主题' (Topic), '文献类型' (Document Type), and a '检索' (Search) button. At the bottom, there is a '时间跨度' (Time Span) section with radio buttons for '所有年份' (All Years) and '从 1986 至 2018' (From 1986 to 2018). There is also a '更多设置' (More Settings) section with a checkbox for 'Science Citation Index Expanded (SCI-EXPANDED) --2000年至今' (Science Citation Index Expanded (SCI-EXPANDED) --2000 to present).

Step2: 数据检索策略

Web of Science

检索 我的工具 ▾ 检索历史 标记结果列表

选择数据库 Web of Science 核心合集 ▾ [进一步了解](#)

[看看我们如何改进分析结果、被引文献检索及更多功能!](#)

基本检索 被引参考文献检索 高级检索 + 更多内容

× 主题 ▾

AND ▾ × Article 文献类型 ▾ 检索

[+ 添加另一字段](#) | [清除所有字段](#)

[单击此处获取有关改善检索的建议。](#)

时间跨度

所有年份 ▾

从 ▾ 至 ▾

▼ 更多设置

Web of Science 核心合集: 引文索引

Science Citation Index Expanded (SCI-EXPANDED) --2000年至今

Social Sciences Citation Index (SSCI) --2000年至今

Step3: 数据的导出与保存——wos

The screenshot displays the Web of Science interface. At the top, the header includes "Web of Science" and navigation options like "帮助" (Help) and "简体中文" (Simplified Chinese). Below the header, the search results page shows "检索结果: 571" (Search Results: 571) and sorting options: "排序方式: 日期" (Sort by: Date), "被引频次" (Citations), "使用次数" (Usage), "相关性" (Relevance), and "更多" (More). Two download options are highlighted with red boxes:

- download_1-500**: A TXT file, 2.14 MB.
- download_501-571**: A TXT file, 228 KB.

On the right side of the interface, there are additional options: "我的工具" (My Tools), "检索" (Search), "Clarivate Analytics", "标记结果列表" (Mark Results List), and "页, 共 58 页" (Page, of 58 pages). At the bottom right, there are options for "创建引文报告" (Create Citation Report) and "分析检索结果" (Analyze Search Results).

Step3: 数据的导出与保存——CNKI

文献 期刊 博硕士 会议 报纸 外文文献 年鉴 百科 词典 统计数据 专利 标准 更多>> 跨库选择(3)

[新型出版模式介绍](#)

作者发文检索 句子检索 一框式检索

输入检索条件:

(主题 资源聚合 词频 并含 词频 精确)

或者 (主题 信息聚合 词频 并含 词频 精确)

作者 中文名/英文名/拼音 精确 作者单位: 全称/简称/曾用名 模糊

发表时间 从 1998-01-01 到 更新时间: 不限

文献来源: 模糊

支持基金: 模糊

网络首发 增强出版 数据论文 中英文扩展 同义词扩展

文献输出的类型为: Refworks, 保存为download_XXX格式。
CNKI允许一次下载500条记录



文献管理中心-文献输出

文献导出格式

- GB/T 7714-2015 格式引文
- CAJ-CD格式引文
- 查新 (引文格式)
- 查新 (自定义引文格式)
- CNKI E-Study
- CNKI桌面版个人数字图书馆
- **Refworks**
- EndNote
- NoteExpress
- NoteFirst
- 自定义

Refworks

⚠ 以下是您将按照当前格式导出的文献, 如需重选文献 [请点击这里](#)

发表时间↓ 被引频次

导出

打印

xls

doc

生成检索报告

RT Journal Article

S

A

A

T

J

Y

I

S

O

K1 网络社区;知识聚合;知识组织 online communities;knowledge aggregation;knowledge organization

AB [目的/意义]梳理网络社区知识聚合的发展历程、研究对象和方法,可为后续研究的开展提供基础,并促进知识聚合理论与方法的深入和普适性发展。[方法/过程]从信息聚合到知识聚合、从馆藏资源知识聚合到网络社区知识聚合两条主线探索网络社区知识聚合的发展历程;从多粒度知识单元、多元知识关联两个维度探索其研究对象;按语义利用程度归纳其基本方法,结合资源特点展望后续研究开展方向。[结果/结论]面向网络社区的知识聚合需要充分利用语义增强技术和领域概念关联,以克服其语义缺失的天然缺陷;同时,以"基于用户"和"面向用户"为主线,重视用户元素的作用;最后,应在综合考虑多元素、多关联的整体视角下开展网络社区知识聚合。

SN 1002-1965

CN 61-1167/G3

LA 中文;

DS CNKI



download_1-496
TXT 文件
789 KB



download_497-812
TXT 文件
386 KB

Step3: 数据的导出与保存——CSSCI



The screenshot displays the CSSCI website interface. At the top left is the logo and the text "中文社会科学引文索引 Chinese Social Sciences Citation Index". Below this is a list of articles, each with a checkbox, a number, author names, and a title. A dialog box is open over the list, showing a document icon and the text "download_1-90", "TXT 文件", and "221 KB". At the bottom of the list, there are buttons for "全部选择" (All selected), "显示" (Display), "下载" (Download), and "收藏" (Favorite). The "全部选择" and "下载" buttons are highlighted with red boxes. Below the buttons, there is a "排序方式:" (Sort by) section with two dropdown menus: "年代" (Year) and "降序" (Descending).

Number	Author(s)	Title
<input checked="" type="checkbox"/> 83	季颖斐 / 高海峰 / 倪代川	RSS信息聚合技术在高校图书馆工作中的应用
<input checked="" type="checkbox"/> 84	姜瑞其	应用
<input checked="" type="checkbox"/> 85	侯晶晶 /	
<input checked="" type="checkbox"/> 86	杨先明	
<input checked="" type="checkbox"/> 87	陈力 / 刘	
<input checked="" type="checkbox"/> 88	周强	在RSS中的应用
<input checked="" type="checkbox"/> 89	张会娥 / 张智雄 / 林颖 / 李飒	基于RSS的科技信息聚合系统的设计和实现
<input checked="" type="checkbox"/> 90	朱良兵 / 纪希禹	RSS的本征与应用

发文年
年代卷
文献类
学科类
学位分
基金类
每页显

排序方式: 年代 降序

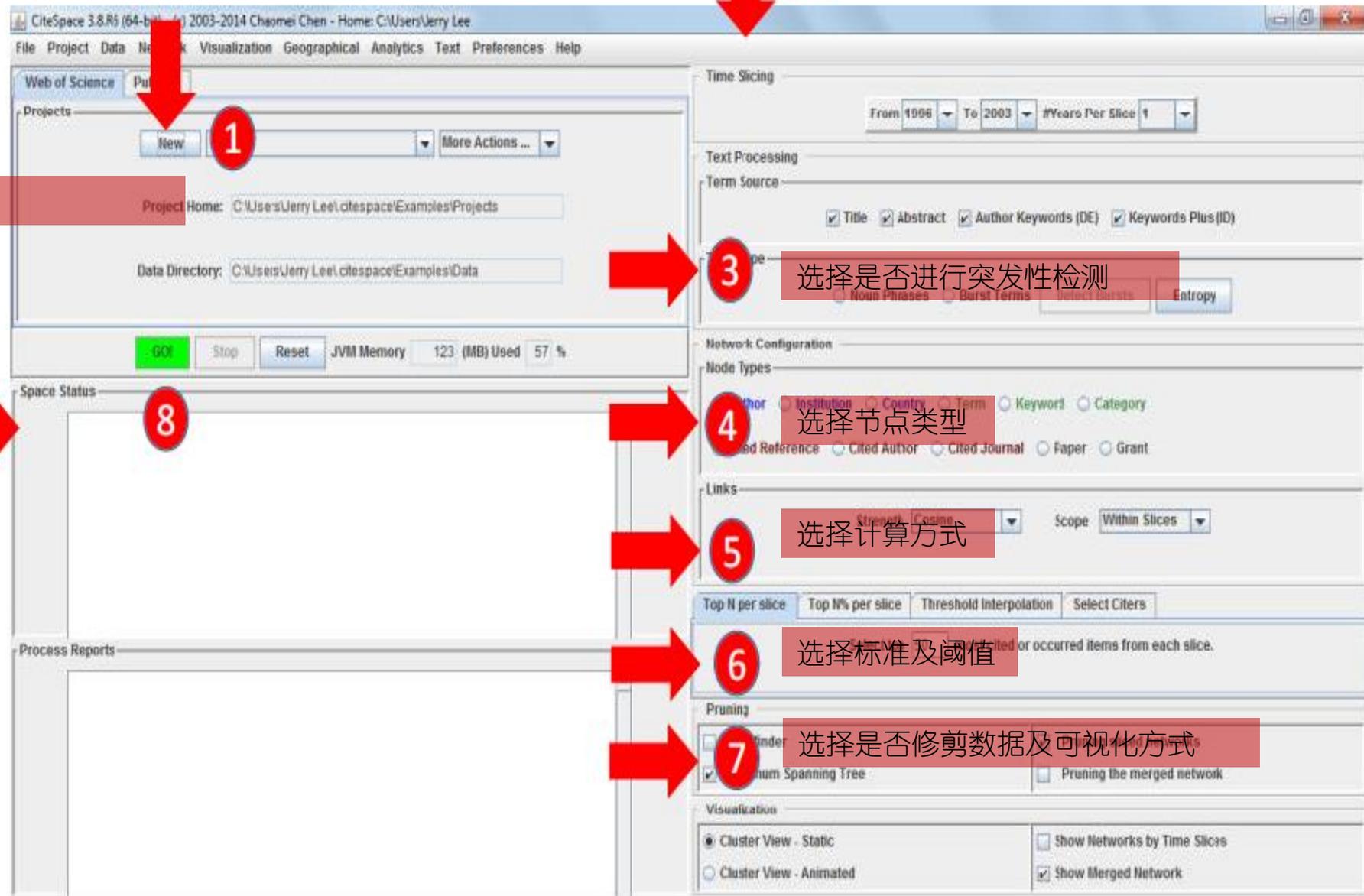
全部选择 显示 下载 收藏

download_1-90
TXT 文件
221 KB

step4:CiteSpace项目设置—界面参数

从数据库中获得数据，并导入CiteSpace

1 数据收集

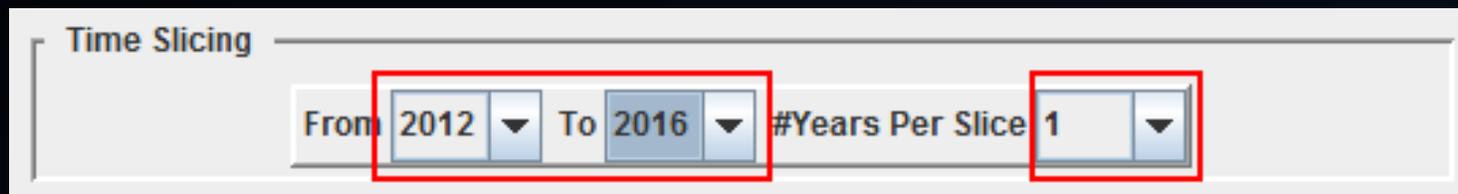


The screenshot shows the CiteSpace 3.8.R5 interface with the following settings and callouts:

- 1** (New button): 从数据库中获得数据，并导入CiteSpace
- 2** (Time Slicing): 选择时间跨度与片段长度 (From: 1998, To: 2003, #Years Per Slice: 1)
- 3** (Burst Detection): 选择是否进行突发性检测 (checked)
- 4** (Node Types): 选择节点类型 (Author selected)
- 5** (Links): 选择计算方式 (Weighted Mean Silhouette selected)
- 6** (Thresholds): 选择标准及阈值 (Top N per slice: 10, Top N% per slice: 10, Threshold Interpolation: Weighted Mean Silhouette)
- 7** (Pruning): 选择是否修剪数据及可视化方式 (checked)
- 8** (Space Status): 显示项目运行状态

- (1) 选择时间片段

根据数据的时间跨度选择合适的时间片段和时间切片。

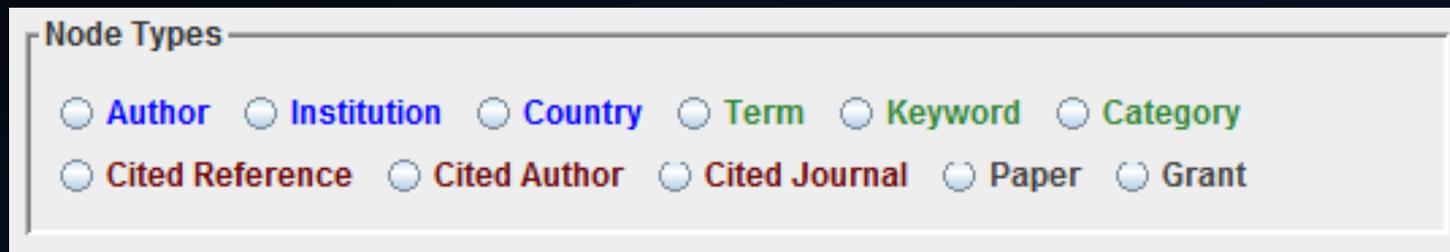


Time Slicing

From 2012 ▼ To 2016 ▼ #Years Per Slice 1 ▼

- (2) 选择节点类型

节点类型决定了使用CiteSpace分析的目的，节点类型分成了四大类，分别是合作网络分析、共现分析、共被引分析和文献耦合



Node Types

Author Institution Country Term Keyword Category

Cited Reference Cited Author Cited Journal Paper Grant

- 节点类型含义

节点类型	含义
<input type="radio"/> Author <input type="radio"/> Institution <input type="radio"/> Country	作者、机构或者国家的合作网络分析
<input type="radio"/> Term <input type="radio"/> Keyword <input type="radio"/> Category	主题、关键词或WoS分类的共现分析
<input type="radio"/> Cited Reference <input type="radio"/> Cited Author <input type="radio"/> Cited Journal	文献的共被引分析、作者的共被引分析以及期刊的共被引分析
<input type="radio"/> Paper <input type="radio"/> Grant	文献的耦合分析

- (3) 选择筛选标准

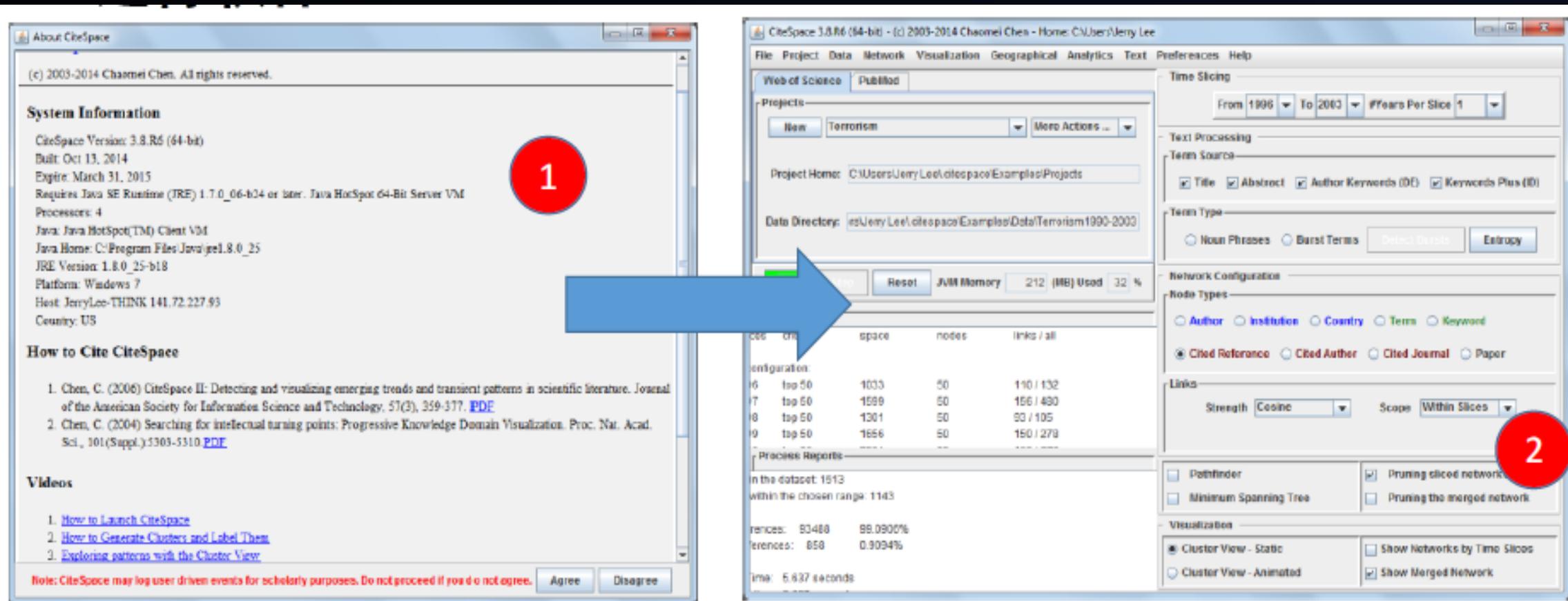
Selection Criteria

Top N Top N% g-index Thresholds Citations Usage180 Usage2013

Select top most cited or occurred items from each slice.

- Top N指取数据中排序前N名的数据；
- Top N%指取数据中排序前百分之N的数据；
- Thresholds中可以自行进行数据阈值的设置；
- Usage180近180天内, 全文的访问次数, 或保存该记录的次数；
- Usage20132013年2月1日至今的全文的访问次数, 或保存该记录的次数。

可视化——运行软件



点击“Agree”进入软件界面

首次运行取消去网络进行的任何裁剪运算

可视化——运行软件

The screenshot shows the CiteSpace 3.8.R6 software interface. A dialog box titled "Your Options" is open in the center, asking "What's your choice?" with three buttons: "Visualize", "Save As GraphML", and "Cancel". A red circle with the number "3" is placed over the "Visualize" button. In the background, the "Space Status" table is visible, with a red circle "4" highlighting the "space" column. At the bottom left, the "Process Reports" section shows various statistics, with a red circle "5" highlighting the "nodes" and "edges" information.

as	criteria	space	nodes	
3	top 50		50	110 / 132
7	top 50		50	156 / 490
3	top 50		50	93 / 105
3	top 50	1656	50	150 / 278

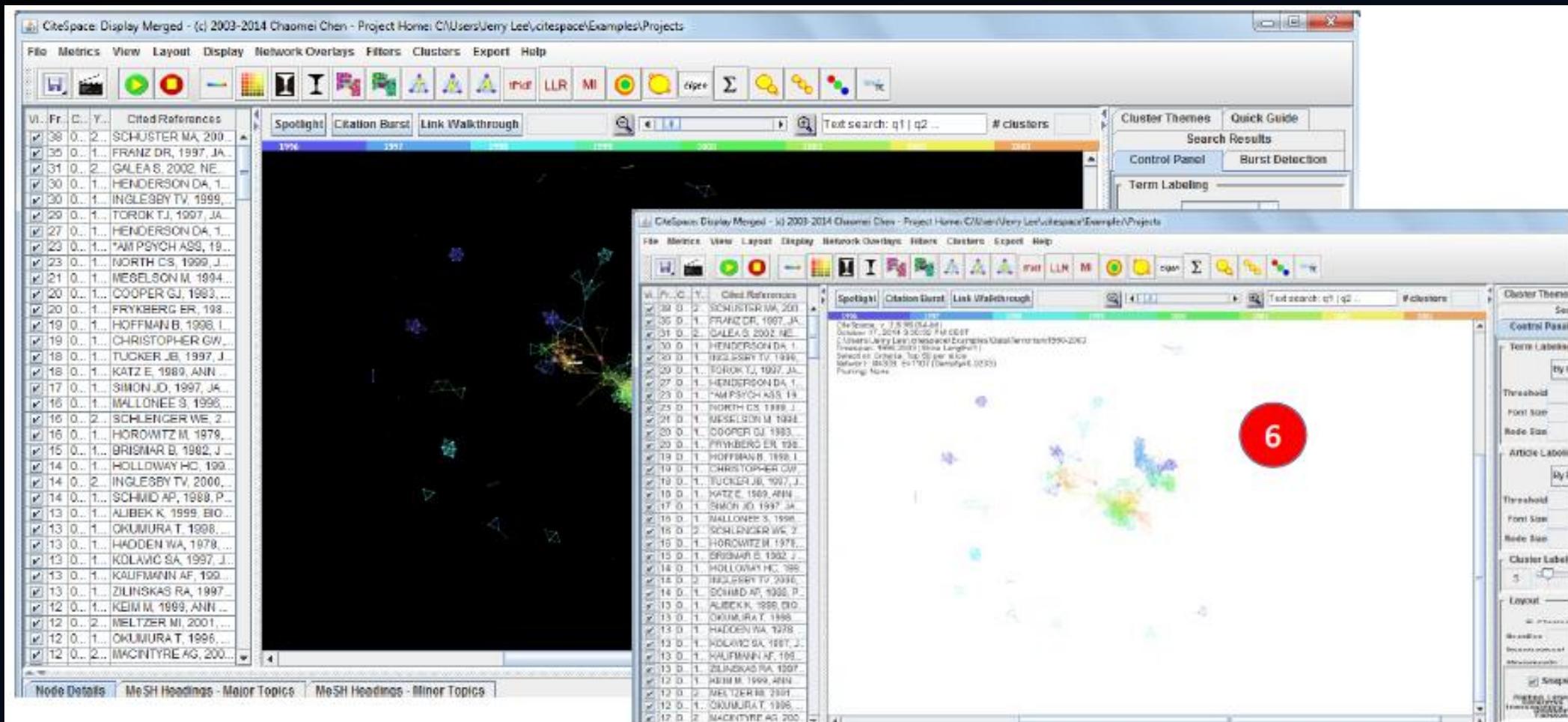
Process Reports:
the dataset: 1513
within the chosen range: 1143
nodes: 93488 99.0906%
edges: 858 0.9094%
me: 7.732 seconds

运行结束后点击“Visualize”进入可视化界面

4 结果按照预设条件运行的情况

5 网络基本参数及其运行基本参数

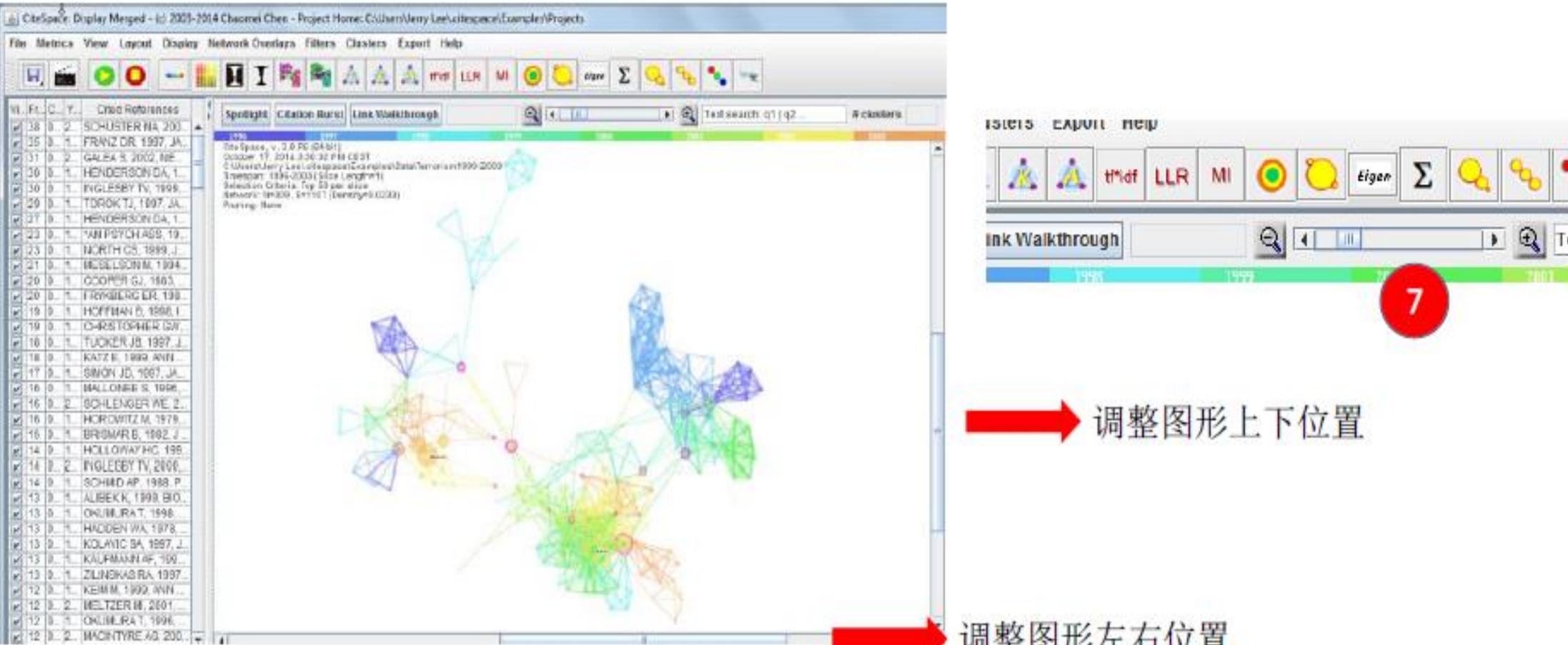
可视化——运行软件



6

网络时时运动的，当网络布局稳定后背景会转成白色

可视化——运行软件



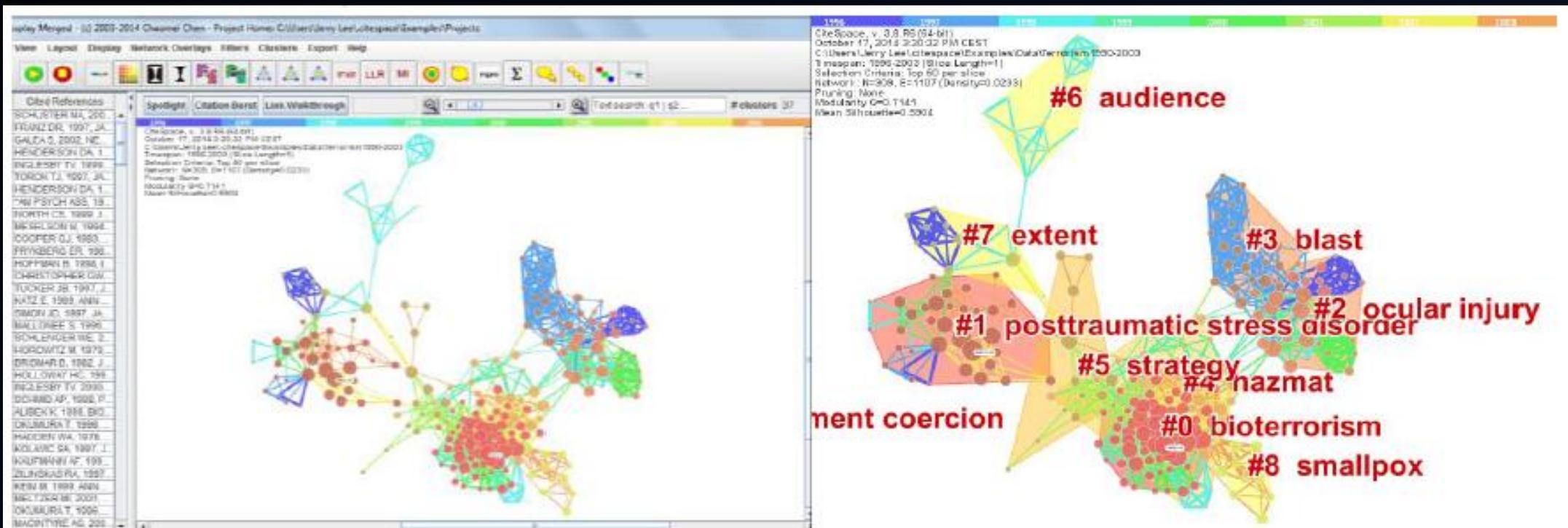
The screenshot displays the CiteSpace software interface. On the left is a list of references with columns for Year, Count, Weight, and Frequency. The main area shows a network graph with nodes and edges, color-coded by time. The top toolbar includes various analysis tools like tMod, LLR, MI, and Eigen. A red circle with the number '7' highlights the zoom tool in the toolbar. A red arrow points to the zoom tool with the text '调整图形上下位置' (Adjust the vertical position of the graph). Another red arrow points to the right edge of the graph area with the text '调整图形左右位置' (Adjust the horizontal position of the graph). A third red circle with the number '7' is located at the bottom left, with an arrow pointing to the text '向右侧拖动放大工具条, 并及时调整图形的二维位置' (Drag the zoom tool to the right and adjust the 2D position of the graph in time).

7 向右侧拖动放大工具条, 并及时调整图形的二维位置

调整图形上下位置

调整图形左右位置

可视化——聚类



点击聚类图标  此时节点的属性将发生变化，聚类结果后点击  （从施引文献的标题中提取聚类命名术语）结果如右图。

为了增加结果的可读性，特别是显示重要的信息。可以进一步使用相关功能对图谱进行优化和调整。

可视化——网络调整

The screenshot displays the CiteSpace software interface. The main window shows a network visualization with nodes and edges. The nodes are labeled with terms such as "audience", "traumatic stress disorder", "ocular injury", "strategy", "nazmat", "bioterrorism", and "smallpox". The interface includes a menu bar (File, Metrics, View, Layout, Display, Network Overlays, Filters, Clusters, Export, Help) and a toolbar with various icons. A "Display" menu is open, showing options for background color, node rendering type, node shape, node size, node fill color, node outline color, label font size, label color, line shape, and link strengths. The "Display" menu is currently set to "Node: Uniformed/Proportional".

The right side of the interface features a "Control Panel" with several tabs: "Cluster Themes", "Quick Guide", "Burst Detection", and "Search Results". The "Cluster Themes" tab is active, showing settings for "Term Labeling" (By Centrality, Show Frequency, Threshold, Font Size, Node Size) and "Article Labeling" (By Freq, Show Frequency, Threshold, Font Size, Node Size). The "Cluster Labeling" section shows a silhouette threshold of 0.05. The "Layout" section includes options for "Cluster View", "Timeline", and "Timezone", along with sliders for "Horizon", "Improvement", and "Movements".

The bottom left corner of the interface shows a list of cited references with columns for volume, first page, count, year, and cited reference. The list includes entries such as "SCHUSTER MA", "FRANZ DR, 199", "GALEA S, 2002", "HENDERSON D", "INGLESBY TV", "TOROK TJ, 199", "HENDERSON D", "AM PSYCH ASS", "NORTH CS, 199", "MEBELSON M", "COOPER GJ, 19", "FRYKBERG ER", "HOFFMAN B, 19", "CHRISTOPHER", "TUCKER JB, 19", "KATZ E, 1989, A", "SIMON JD, 1997", "MALLONEE S, 1", "SCHLENGER V", "HOROWITZ M, 1", "BRISMAR B, 19", "HOLLOWAY HC", "INGLESBY TV, 2", "SCHMID AP, 19", "ALIBEK K, 1999", "OKUMURA T, 19", "HADDEN WA, 1", "KOLAVIC SA, 19", "KAUFMANN AF", "ZILINSKAS RA", "KEIM M, 1999, A", "MELTZER MI, 20", "OKUMURA T, 19", and "MACINTYRE AG, 200".



年代色标

图谱背景色

寻找聚类

用主题词
标记聚类

图谱大小调谐

保存图谱/
图像

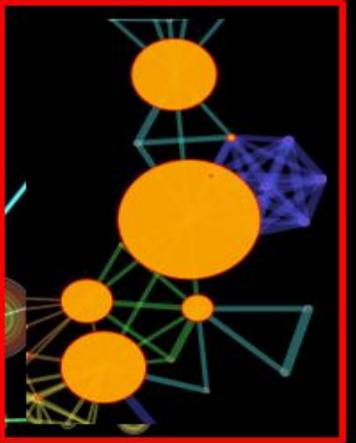
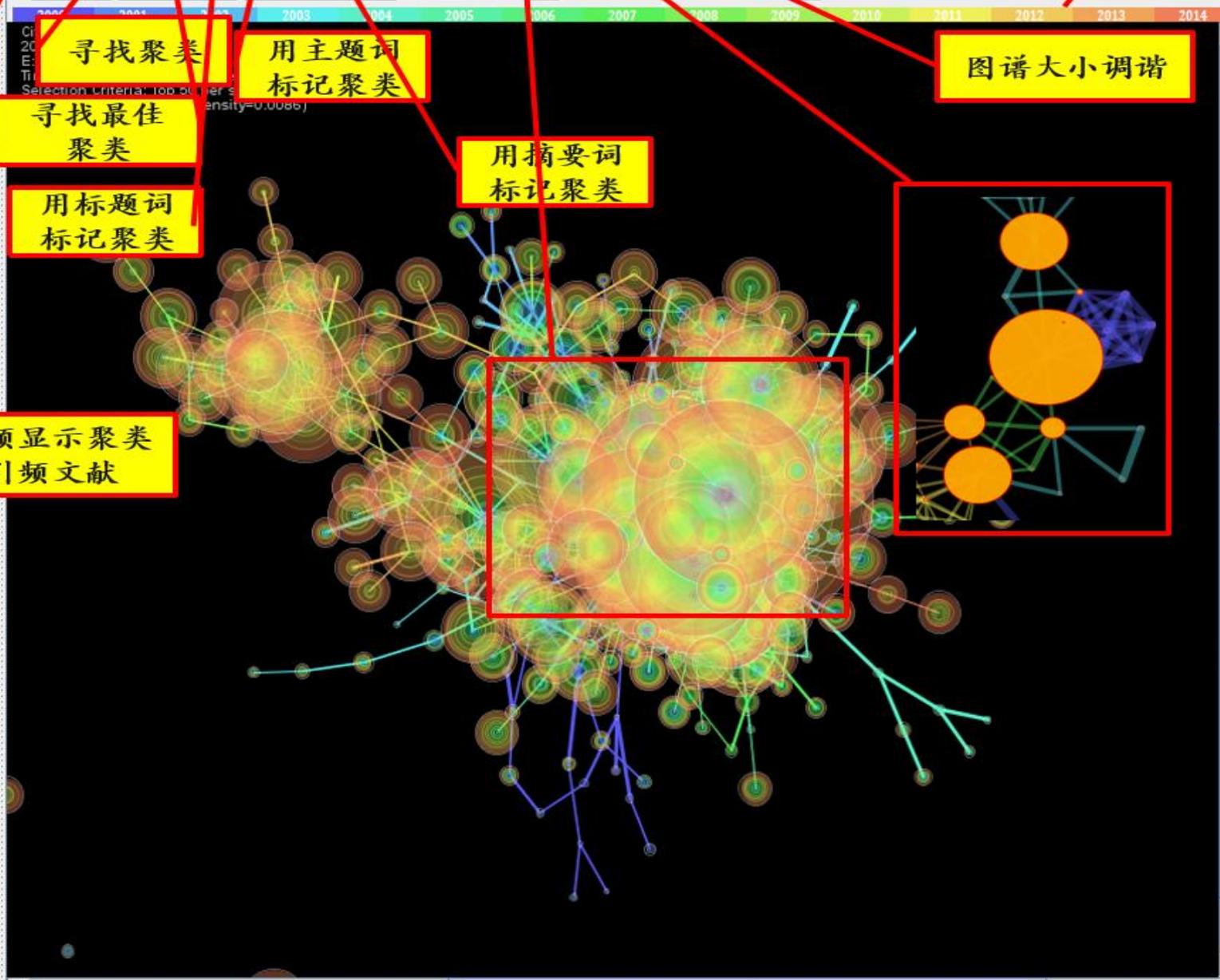
寻找最佳
聚类

用标题词
标记聚类

用摘要词
标记聚类

按词频显示聚类
高引频文献

VI...	FR...	C...	Y...	Cited References
✓	176	0	...	PORTES A, 1993, AN...
✓	119	0	...	A, 2001, LE...
✓	119	0	...	N M, 1964, A...
✓	118	0	...	1994, RACIAL...
✓	94	0	...	RAI A, 1996, ...
✓	92	0	...	GELLNER ERNEST, ...
✓	87	0	...	BILLIG MICHAEL, 19...
✓	86	0	...	PUTNAM R D, 2000, ...
✓	81	0	...	ALBA R D, 2003, RE...
✓	78	0	...	BRUBAKER ROGER...
✓	77	0	...	PIERRE BOURDIEU, ...
✓	77	0	...	ONG A, 1999, FLEXIB...
✓	76	0	...	PHINNEYS J B, 1992...
✓	75	0	...	KYMLICKA W, 1995, ...
✓	74	0	...	WILSON W J, 1987, T...
✓	71	0	...	PORTES A, 1...
✓	71	0	...	SMITH AD, 15...
✓	71	0	...	SOYSAL Y, 1...
✓	69	0	...	BHABHA H K...
✓	68	0	...	RADLOFF L S, 1977, ...
✓	66	0	...	WATERS M C, 1999, ...
✓	66	0	...	GILROY P, 1993, BLA...
✓	65	0	...	WATERS M C, 1990, ...
✓	64	0	...	MASSEY DS, 1993, A...
✓	61	0	...	FANON FRANTZ, 196...
✓	60	0	...	AIKEN L S, 1991, MU...
✓	60	0	...	BRAH A, 1996, CART...
✓	60	0	...	BARTH F, 1969, ETH...
✓	60	0	...	VERTOVEC S, 1999, ...
✓	60	0	...	LEVITT P, 2001, TRA...
✓	58	0	...	ALLPORT GW, 1954, ...
✓	57	0	...	BARON RM, 1986, J ...
✓	55	0	...	HOBBSAWM E, 1983, ...
✓	53	0	...	PORTES A, 1998, AN...
✓	53	0	...	SAID EDWARD, 1978...
✓	53	0	...	ESSED P, 1991, UN...
✓	52	0	...	LEVITT P, 2004, INT ...
✓	52	0	...	MODOOD T, 1997, E...
✓	51	0	...	ALBA R, 1997, INT MI...
✓	51	0	...	GILROY PAUL, 1987, ...



Cluster Themes Quick Guide

Burst Detection Search Results

Control Panel

Term Labeling

By Centrality Show Frequency

Threshold

Font Size

Node Size

Article Labeling

By Freq Show Frequency

Threshold

Font Size

Node Size

Cluster Labeling [Silhouette>0.05]

Layout

Cluster View Timeline Timezone

Iteration

Improvement

Movements

Snapshot Color Map Spotlight

Waiting Time

Darkness

Transparency

Relaxer

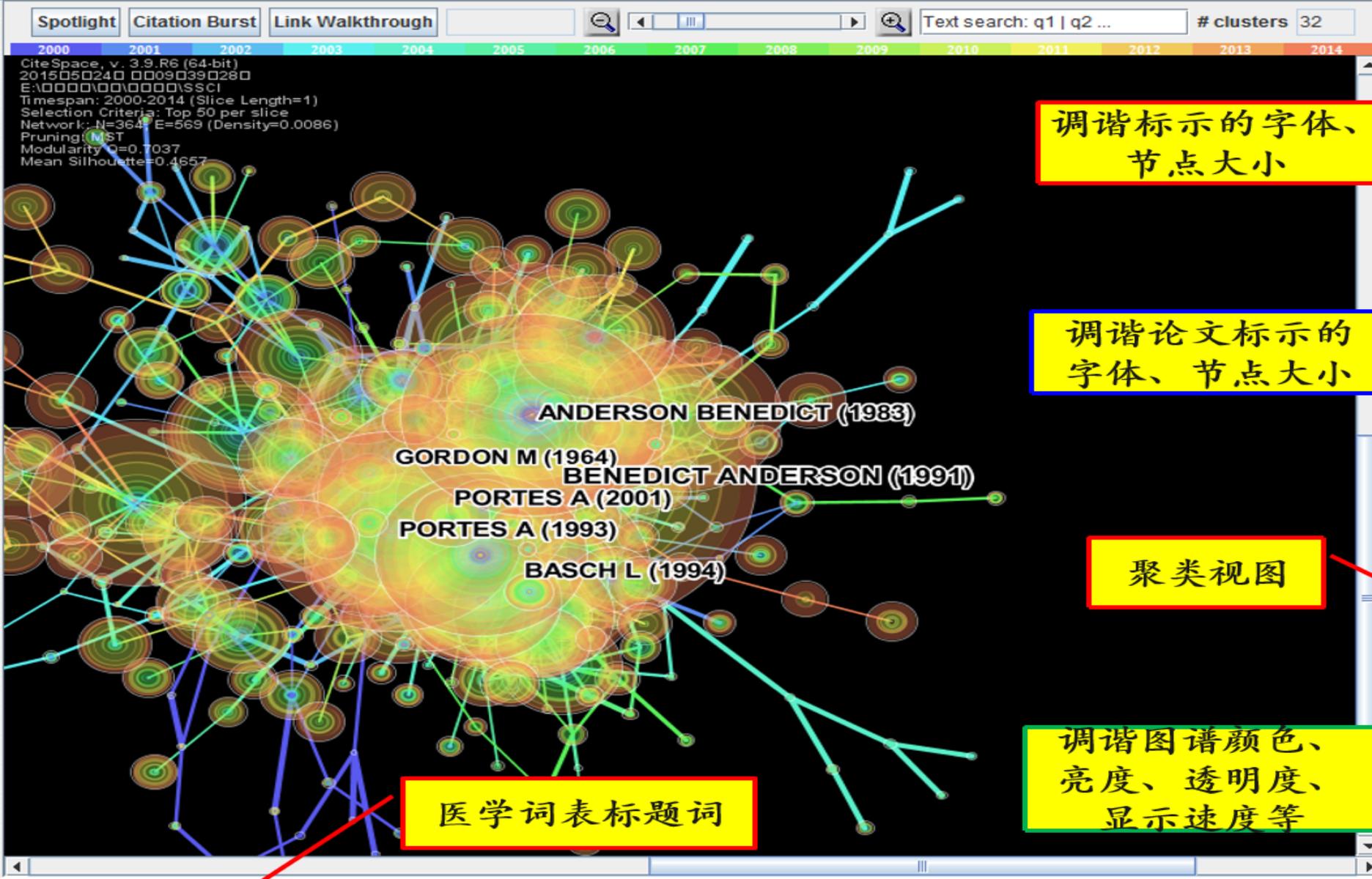
Fisheye

CiteSpace 使用——图谱调谐



突显词选择

参数调谐板



调谐标示的字体、节点大小

调谐论文标示的字体、节点大小

聚类视图

医学词表标题词

调谐图谱颜色、亮度、透明度、显示速度等

Cluster Themes Quick Guide

Burst Detection Search Results

Control Panel

Term Labeling

By Centrality Show Frequency

Threshold 1

Font Size 100

Node Size 10

Article Labeling

By Freq Show Frequency

Threshold 107

Font Size 4

Node Size 46

Layout

Cluster View Timeline Timezone

Iteration 209

Improvement 0.058 0.01

Movements 100

Snapshot Color Map Spotlight

Waiting Time Darkness Transparency Relaxer Fisheye

时间视图

时区视图



2000

2001

2002

2003

2008

2009

2010

2011

2012

2013

2014

CiteSpace, v. 3.9.R6 (64-bit)

20150502400090390280

突显点
表示新兴学科

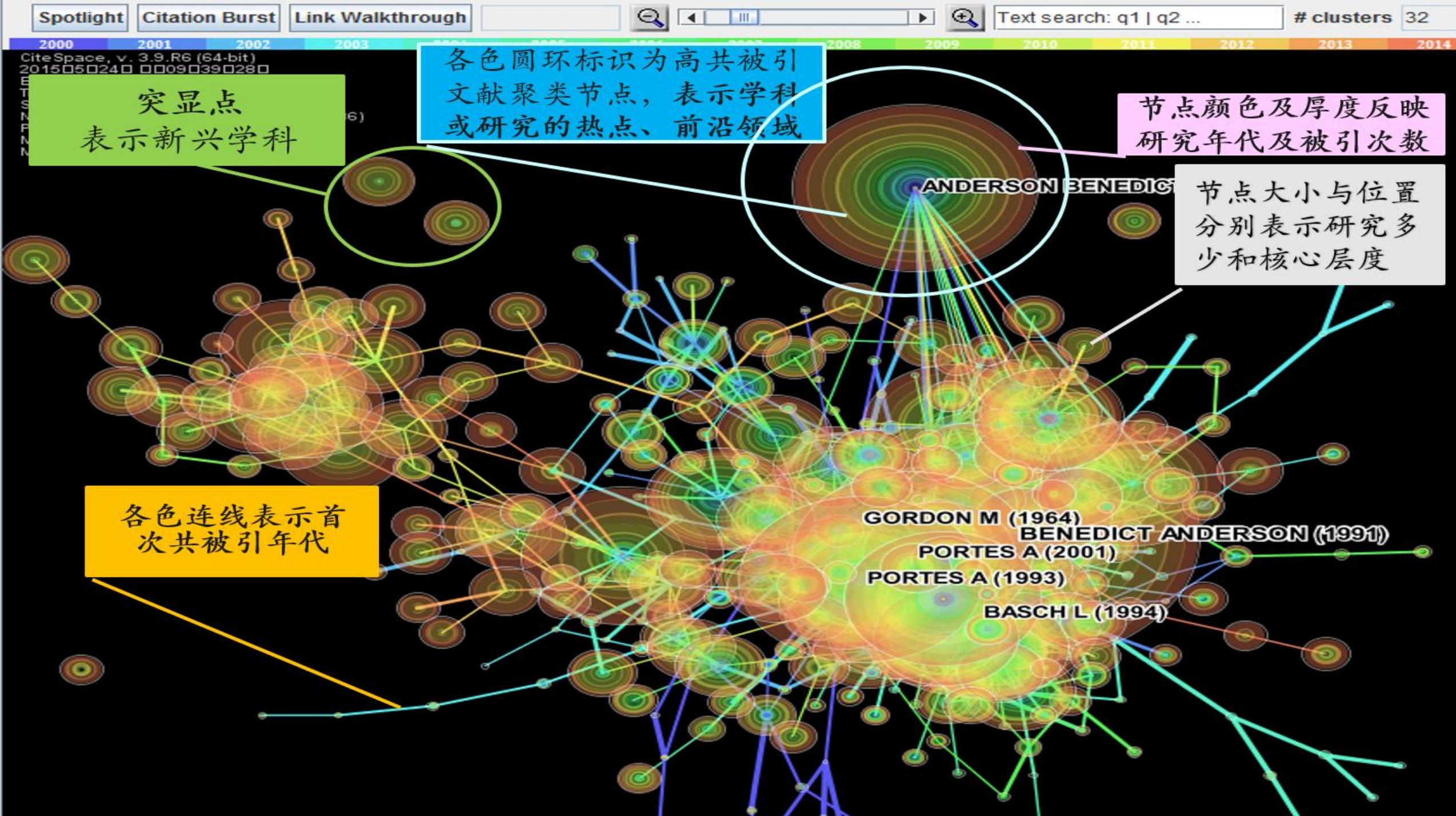
各色圆环标识为高共被引
文献聚类节点，表示学科
或研究的热点、前沿领域

节点颜色及厚度反映
研究年代及被引次数

节点大小与位置
分别表示研究多
少和核心层度

各色连线表示首
次共被引年代

GORDON M (1964)
BENEDICT ANDERSON (1991)
PORTES A (2001)
PORTES A (1993)
BASCH L (1994)



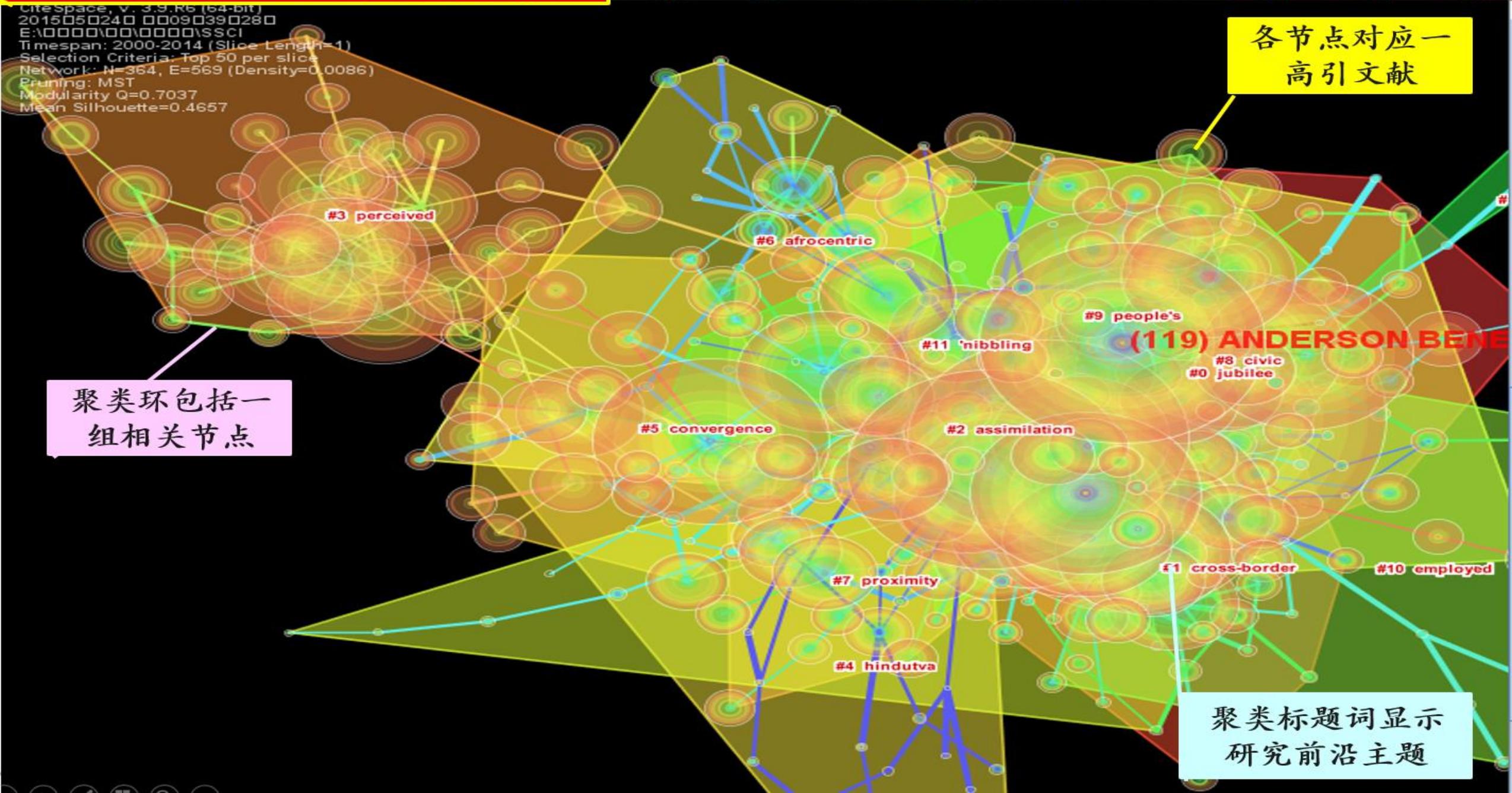
显示聚类节点及其标题词的图谱

CiteSpace, v. 3.9.R6 (64-bit)
2015050240 00090390280
E:\0000\00\0000\SSCI
Timespan: 2000-2014 (Slice Length=1)
Selection Criteria: Top 50 per slice
Network: N=364, E=569 (Density=0.0086)
Pruning: MST
Modularity Q=0.7037
Mean Silhouette=0.4657

各节点对应一
高引文献

聚类环包括一
组相关节点

聚类标题词显示
研究前沿主题



可视化——网络调整

Cluster Labeling [Silhouette=0.05]

- 拖动对聚类标签进行调整

Widening Time: 0.000000
 Silhouette: 0.050000
 Transparence: 0.500000
 Highlight: false

Cluster Labeling [Silhouette=0.05]

- 拖动对连线的透明度进行调整

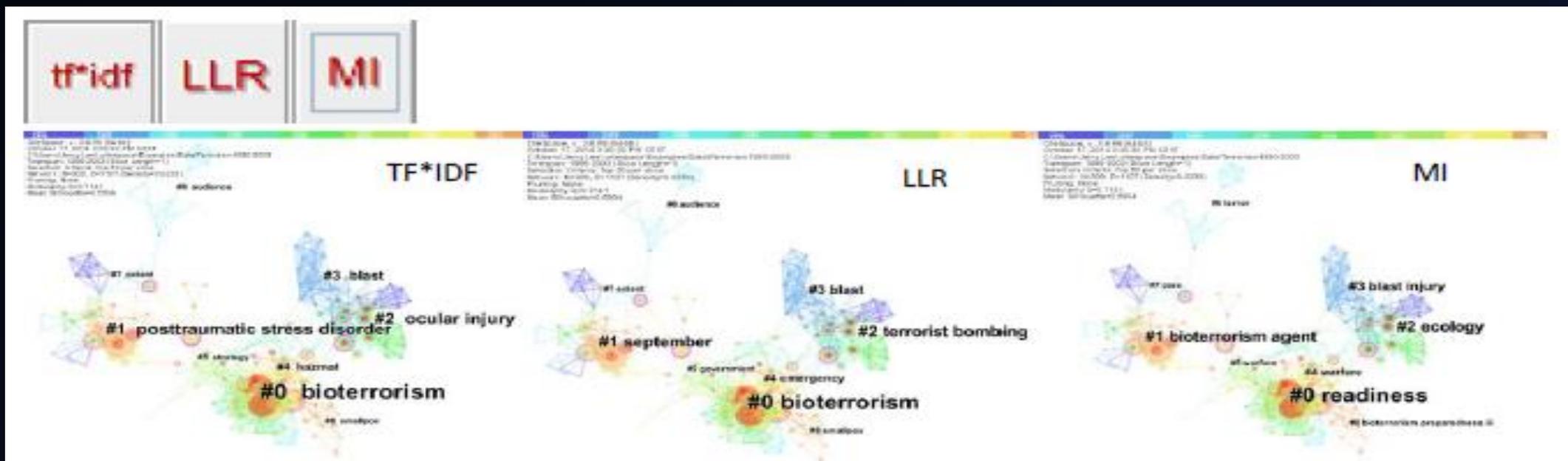
Widening Time: 0.000000
 Silhouette: 0.050000
 Transparence: 0.500000
 Highlight: false

- 点击对节点属性进行调整

可视化——共被引网络调整

使用不同的方法对聚类进行命名

- **tf*idf 算法**侧重于选择最突出特征的词语来代表一个聚类，
- **LLR和MI算法**侧重于选择最具独特性的词语作为聚类的名称。
- 通常情况下陈超美教授**推荐使用LLR算法**得到的结果。



可视化——聚类详细信息查询

CiteSpace: Display Merged - (Q) 2003-2014 Chaomei Chen - Project Home: C:\Users\Very Lee\CiteSpace\Examples\Projects

File Metrics View Layout Display Network Overlays Filters Clusters Export Help

1. Clustering
1. Clustering (Advanced)
2. Label Clusters
3. Display Labels Selected by Different Algorithms
4. Summarization of Clusters
5. List Top Ranked Terms per Cluster by LSA
6a. View Similarity Networks of Citing Terms (VSM)
6b. View Citing Networks to Clusters (LSA)
Expectation Maximization (EM)
Enable/Disable Cluster Membership Export
Set the Minimum Number of Words of Cluster Label Terms
Set the Maximum Number of Words of Cluster Label Terms
Set the Maximum Number of Title Terms for Cluster Labeling
Set the Maximum Number of Index Terms for Cluster Labeling
Set the Maximum Number of Title Terms to display
Set the Maximum Number of Log-Likelihood Ratio (LLR) Terms to display
Summarize a Single Cluster
Select Cluster-Summarizing Sentences
Cluster Explorer

1996
Cite Space, v. 3.8.R6 (64-bit)
October 17, 2014 3:36:32 PM
C:\Users\Very Lee\CiteSpace\Examples\Projects\2003-2014
Timespan: 1996-2003 (Slice
Selection Criteria: Top 50 pr
network: N=309, E=1107 (64
Pruning: None
Modularity Q=0.7141
Mean Silhouette=0.5504

Fr. C. Y. Cited References
38 0. 2 SCHUSTER MA, 200...
35 0. 1 FRANZ DR, 1997, JA...
31 0. 2 GALEA S, 2002, NE...
30 0. 1 HENDERSON DA, 1...
29 0. 1 INGLESBY TV, 1999...
20 0. 1 TOROK TJ, 1997, JA...
27 0. 1 HENDERSON DA, 1...
23 0. 1 *AM PSYCHASS 19...
23 0. 1 NORTH CS, 1999, J...
21 0. 1 MESELSOM M, 1994...
20 0. 1 COOPER GJ, 1983...
20 0. 1 FRYKBERGER, 198...
19 0. 1 HOFFMAN B, 1998, I...
19 0. 1 CHRISTOPHER GW...
19 0. 1 TUCKER JB, 1997, J...
18 0. 1 KATZ E, 1989, ANIN...
17 0. 1 SIMON JD, 1997, JA...
16 0. 1 MALLONEE S, 1996...
16 0. 2 SCHLENGER WE, 2...
16 0. 1 HOROWITZ M, 1970...
15 0. 1 BRISMAR B, 1982, J...
14 0. 1 HOLLOWAY HC, 199...
14 0. 2 INGLESBY TV, 2000...
14 0. 1 SCHMID AP, 1983, P...
13 0. 1 ALBEKK, 1999, BIO...
13 0. 1 OKUMURA T, 1998...
13 0. 1 HAODEN WA, 1978...
13 0. 1 KOLAVIC SA, 1997, J...
13 0. 1 KAUFMANN AF, 199...
12 10 1 70 INGVAS BA 1997

explore and summarize clusters and their member items
#5 bioterrorism preparedness iii



Input

? Use a citation threshold for selecting sentences

5

OK Cancel



CiteSpace Cluster Explorer

Clusters

S	Cl.	Sl.	Pr.	Q	W	Top Terms (F#W#)	Top Terms (log-lik.)	Terms (rank)
5	0	05	0	1	10	bioterrorism; bioterrorism (31.91); readiness	bioterrorism (31.91); readiness	bioterrorism s...
1	37	0	1	1	15	postbioterror; september (68.06); bioterrorism s...	september (68.06); bioterrorism s...	bioterrorism s...
2	36	0	1	1	14	ocular injury; terrorist bombing ill; ecology	terrorist bombing ill; ecology	ecology
3	26	0	1	1	10	blast; blast (76.34); 1.05-4; blast injury	blast (76.34); 1.05-4; blast injury	blast injury
4	24	0	1	1	11	warfare; warfare (72.07); warfare	warfare (72.07); warfare	warfare
5	14	0	1	1	10	storage; storage (11.36); warfare	storage (11.36); warfare	warfare
6	13	0	1	1	11	audience; audience (33.43); terror	audience (33.43); terror	terror
7	12	0	1	1	12	oilent; oilent (12.8); case	oilent (12.8); case	case
8	11	0	1	1	12	smallpox; smallpox (36.08); bioterrorism s...	smallpox (36.08); bioterrorism s...	bioterrorism s...
9	7	0	1	1	12	nuclear war; nuclear war (52.48); medical care	nuclear war (52.48); medical care	medical care
10	7	0	1	1	11	analysis; analysis (36.42); T.O.; perbioterrori...	analysis (36.42); T.O.; perbioterrori...	perbioterrori...
11	7	0	1	1	9	government; government (40.04); model	government (40.04); model	model
12	0	0	1	1	12	leak; leak (12.01); war	leak (12.01); war	war
13	0	0	1	1	8	transnational; post-cold war era; post-cold war...	post-cold war era; post-cold war...	post-cold war...

Citing Articles

1. 011 Afsar, SM (1440) combating the threat of bio warfare and bioterrorism
1. 011 Inglesby, TV (1000) anthrax as a biological weapon - medical and public health preparedness
1. 011 Richards, CF (1880) emergency physicians and biological terrorism
1. 011 Franz, DR (2006) biological terrorism: understanding the threat, preparedness, and response
1. 011 Hall, AS (1999) comparison of vegetation sampling sites for early detection of anthrax spores from reindeer pastures after aerial dispersal
1. 011 Gordon, SM (1000) the threat of bioterrorism: a review to learn more

Cited References

Fr.	C.	Y.	Key	Aut.	Year	Title	Do.	Vol.	Page/Full
5	0	05	1	00	2000	IPRL V320 P11		2	
3	0	04	1	00	1999	AE V7 P 2			
3	0	00	1	00	1992	ANL V186 P21		6	
37	0	06	1	00	1999	ANL V184 P177		1	
10	0	00	1	00	1998	AE V141 P152			
8	0	00	1	00	2002	JA V287 P2		0	
4	0	01	1	00	1999	EM V5 P526		3	
4	0	00	1	00	1994	PA V7 P 5			
36	0	14	1	00	1999	JA V281 P1		1	
7	0	01	1	00	1999	EM V5 P540			
5	0	00	1	00	2001	JA V286 P2		1	
12	0	00	1	00	1998	ANL V178 P1204			

Summary Sentences

Representative Sentences

Select method: Centrality PageRank Select from Abstracts Clusters completed: 40 of 50 Time taken: 7.111 seconds Timeout:

147 sentences extracted:

0.000482 181.000089571600037 objective the working group on child bioterrorism has developed consensus-based recommendations for measures to be taken by medical and public health professionals following the use of plague as a biological weapon against a civilian population

可视化——自动生成研究报告

Project Home: C:\Users\Uerry Lee\citespace\Example\Projects

Items Clusters Export Help

Network Summary Table

Network

Citation Burst Clustering + Labeling + Save Cluster Files

Load Cluster Membership to DB

64-bit
1:32 PM CEST
citespace\Examples
(Slice Length=1)
1.50 per slice
107 (Density=0.023)

Merge network_summary_YYYY-YYYY.csv files and structural_change_metrics.csv

Generate a Narrative

Run Batch (Generate and display a summary of the network in HTML)

#6 terror

#7 case

#3 blast injury

#1 bioterrorism agent

#2 ecology

AUTOMATICALLY GENERATED NARRATIVES

Time of creation: Fri Oct 17 16:31:42 CEST 2014

MAJOR CLUSTERS

The network is divided into 14 co-citation clusters. These clusters are labeled by index terms from their own citers. The largest 5 clusters are summarized.

Table 1. Summary of the largest 5 clusters.

ClusterID	Size	Silhouette	Label (TFIDF)	Label (LLR)	Label (MI)	mean(Citer Year)
0	65	0.651	15.9) bioterrorism	bioterrorism (81.91, 1.0E-4)	readiness	1996
1	37	0.92	15.14) posttraumatic stress disorder	september (68.98, 1.0E-4)	bioterrorism agent	1995
2	36	0.901	14.65) ocular injury	terrorist bombing (65.24, 1.0E-4)	ecology	1987
3	26	0.818	15.09) blast	blast (76.34, 1.0E-4)	blast injury	1982
4	24	0.815	11.96) hazmat	emergency (72.67, 1.0E-4)	warfare	1995

The largest cluster (#0) has 65 members and a silhouette value of 0.651. It is labeled as *bioterrorism* by both LLR and TFIDF, and as *readiness* by MI. The most active citer (1999) combating the threat of bio warfare and bioterrorism.

The second largest cluster (#1) has 37 members and a silhouette value of 0.92. It is labeled as *september* by LLR, *posttraumatic stress disorder* by TFIDF, and *bioterrorism* to the cluster is 0.16 Tucker, P (2000) predictors of post-traumatic stress symptoms in oklahoma city: exposure, social support, peri-traumatic responses.

The third largest cluster (#2) has 36 members and a silhouette value of 0.901. It is labeled as *terrorist bombing* by LLR, *ocular injury* by TFIDF, and *ecology* by MI. The most active citer is Stein, M (1999) medical consequences of terrorism - the conventional weapon threat.

The 4th largest cluster (#3) has 26 members and a silhouette value of 0.818. It is labeled as *blast* by both LLR and TFIDF, and as *blast injury* by MI. The most active citer to (1997) toxicology of blast over-pressure.

The 5th largest cluster (#4) has 24 members and a silhouette value of 0.815. It is labeled as *emergency* by LLR, *hazmat* by TFIDF, and *warfare* by MI. The most active citer (1999) chemical warfare agents: emergency medical and emergency public health issues.

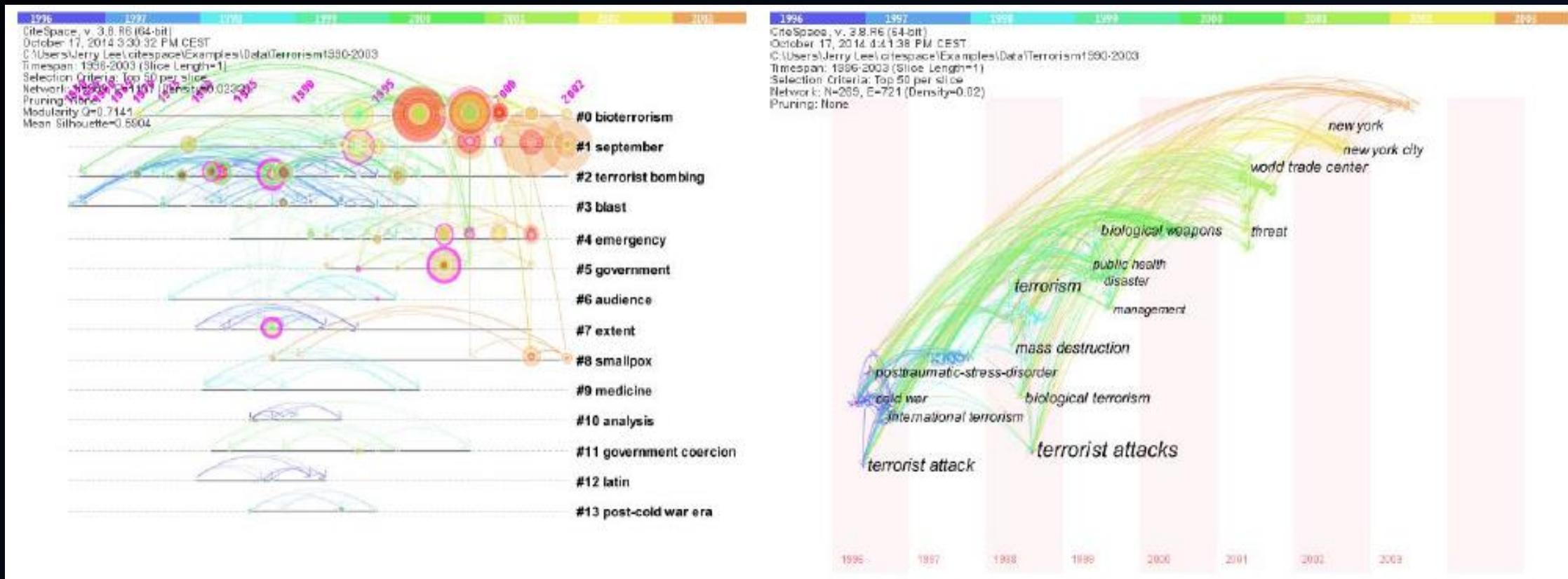
可视化——突发性文献信息

The screenshot shows the CiteSpace software interface. The main window displays a 'Citation Burst History' table with columns for rank, frequency, count, year, and cited references. A 'Spotlight' dialog box is open, showing the selected node's details. A second 'Input' dialog box is shown, asking for the number of references to include (1-24), with '20' entered.

Top 20 References with Strongest Citation Bursts

References	Year	Strength	Begin	End	1996 - 2003
SCHUSTER MA, 2001, NEW ENGL J MED, V345, P1507	2001	8.9432	2002	2003	-----
COOPER GJ, 1983, J TRAUMA, V23, P955	1983	4.6049	1996	1999	-----
NORTH CS, 1999, JAMA-J AM MED ASSOC, V282, P755	1999	4.4484	2002	2003	-----
INGLESBY TV, 1999, JAMA-J AM MED ASSOC, V281, P1735	1999	4.0214	2001	2003	-----
FRYKBERG ER, 1988, ANN SURG, V208, P569	1988	3.5106	1997	1999	-----
HENDERSON DA, 1999, SCIENCE, V283, P1279	1999	3.0777	2001	2001	-----

可视化——呈现方式



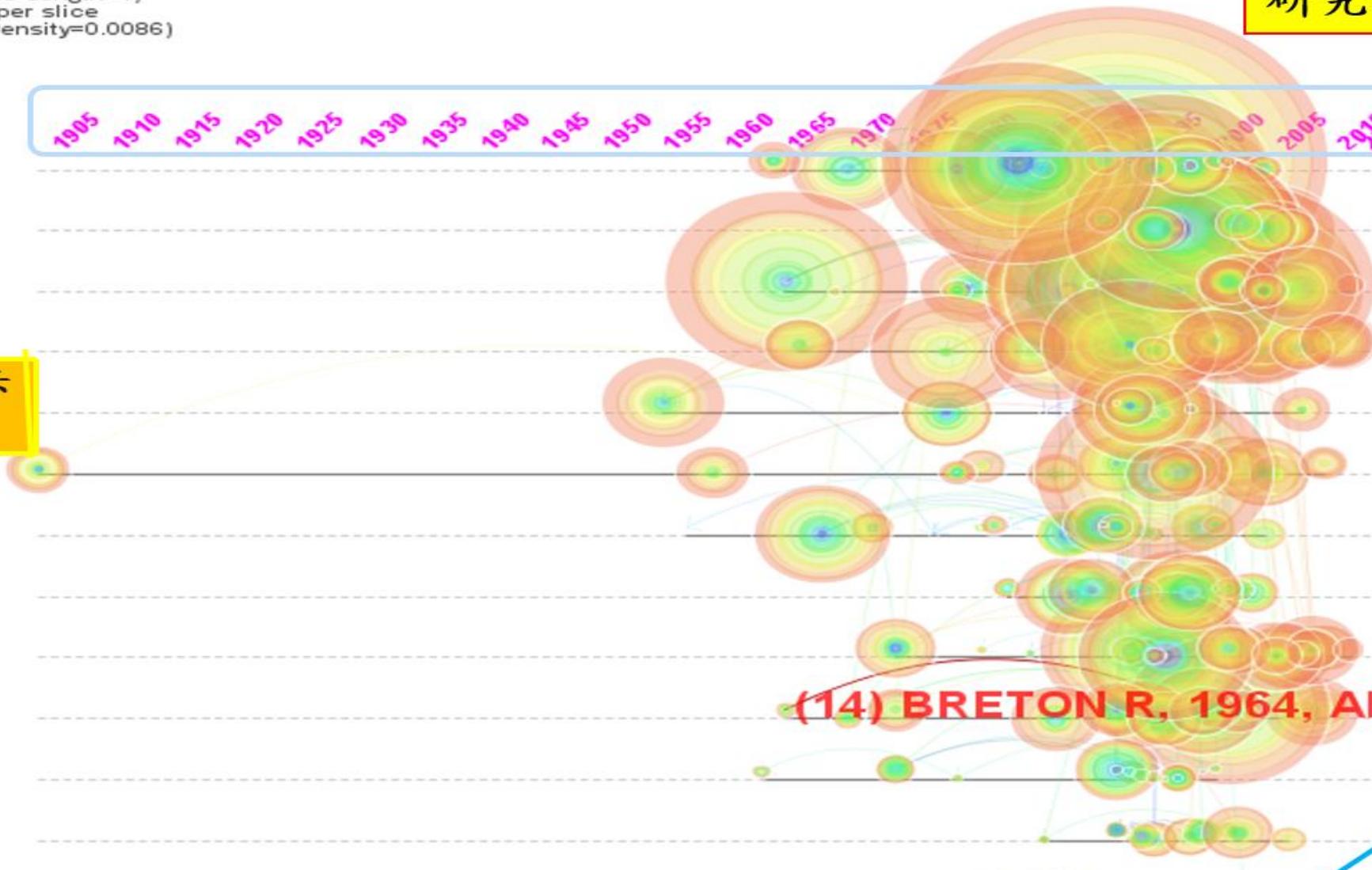
- **Timeline** 呈现方式（共被引聚类仅仅可以选择两种呈现方式，
- 主题词分析可以选择**Time zone** 来呈现结果，如右图）

CiteSpace, v. 3.9.R6 (64-bit)
2015050240 00090390280
E:\0000\00\00000\SSCI
Timespan: 2000-2014 (Slice Length=1)
Selection Criteria: Top 50 per slice
Network: N=364, E=569 (Density=0.0086)
Pruning: MST
Modularity Q=0.7037
Mean Silhouette=0.4657

研究进展时间图



按年代显示
研究前沿



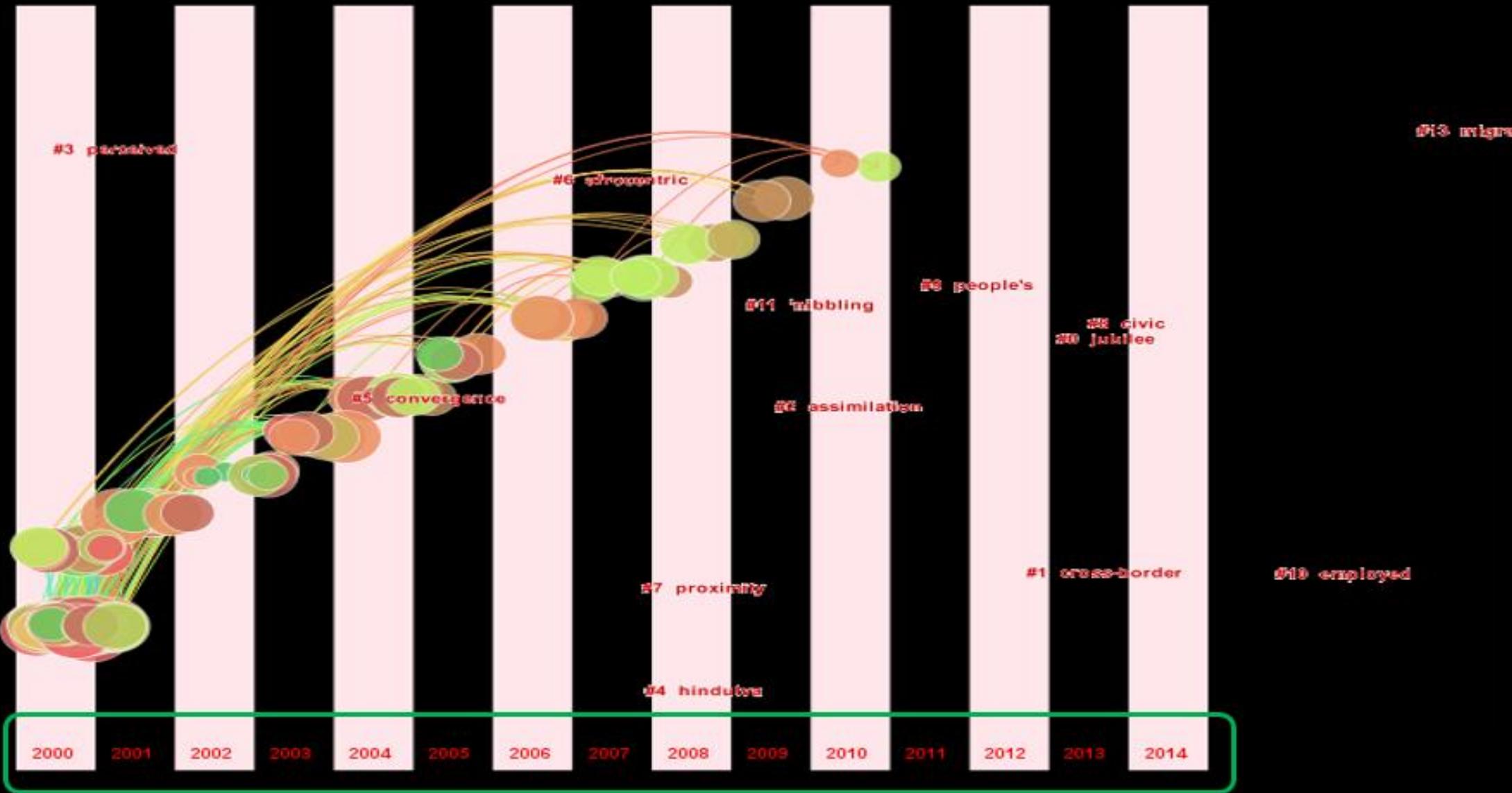
- #0 jubilee
- #1 cross-border
- #2 assimilation
- #3 perceived
- #4 hindutva
- #5 convergence
- #6 afrocentric
- #7 proximity
- #8 civic
- #9 people's
- #10 employed
- #11 'nibbling
- #12 legislative
- #13 migrating

(14) BRETON R, 1964, AM J SOCIOL, \

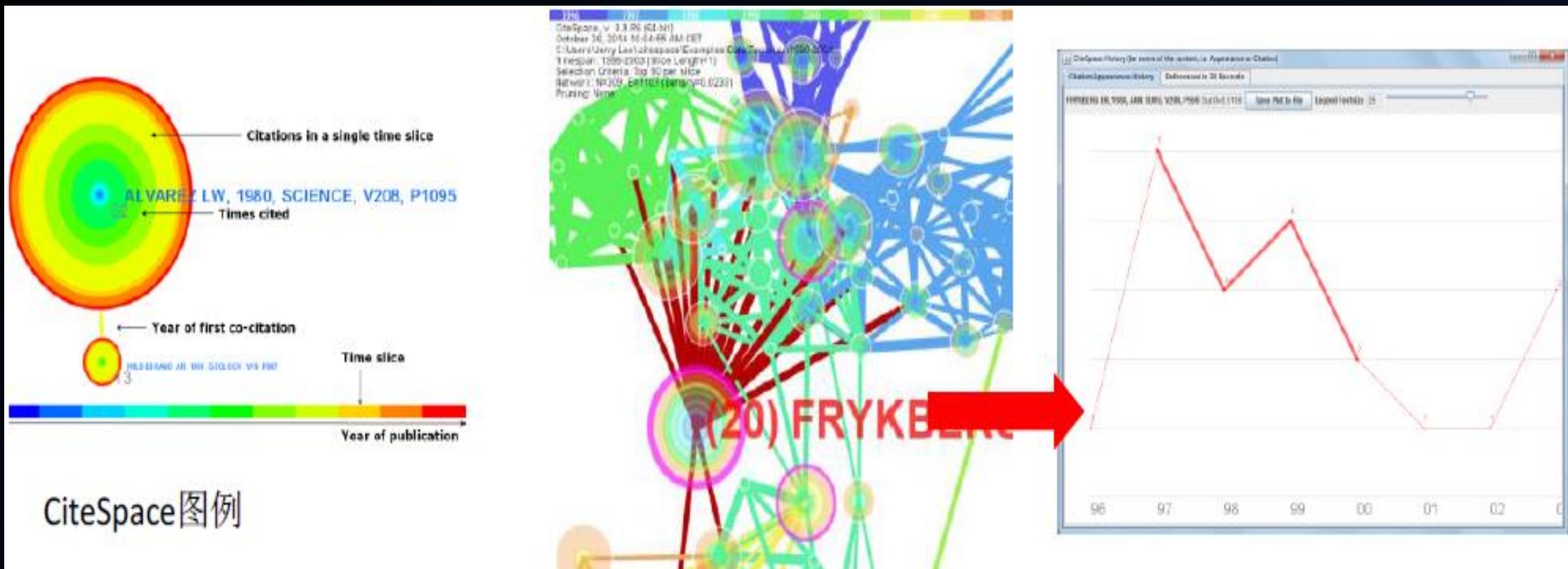
聚类标题词
表示研究热点

研究进展时区图

CiteSpace, v. 3.9.R6 (64-bit)
201505024 0009039028
E:\0000\00\0000\SSCI
Timespan: 2000-2014 (Slice Length=1)
Selection Criteria: Top 50 per slice
Network: N=364, E=569 (Density=0.0086)
Pruning: MST
Modularity Q=0.7037
Mean Silhouette=0.4657



引文年环



- 引文年环 - 代表着某篇文章的引文历史。引文年轮的颜色代表相应的引文时间，一个年轮厚度和与相应时间分区内引文数量成正比

Visi	Freq	Centra	
✓	176	0.00	19
✓	119	0.00	19
✓	119	0.00	19
✓	118	0.00	19
✓	117	0.00	20
✓	110	0.00	19
✓	102	0.00	19
✓	98	0.00	19
✓	94	0.00	19
✓	92	0.00	19
✓	87	0.00	20
✓	86	0.00	20
✓	81	0.00	19
✓	78	0.00	19
✓	77	0.00	19
✓	77	0.00	19
✓	76	0.00	19
✓	75	0.00	19
✓	74	0.00	19
✓	71	0.00	19
✓	71	0.00	19
✓	69	0.00	19
✓	68	0.00	19
✓	66	0.00	19
✓	66	0.00	19
✓	65	0.00	19
✓	64	0.00	19
✓	61	0.00	19
✓	60	0.00	19
✓	60	0.00	19
✓	60	0.00	19
✓	60	0.00	19
✓	60	0.00	19
✓	60	0.00	19
✓	60	0.00	20
✓	58	0.00	19
✓	57	0.00	19
✓	55	0.00	19
✓	53	0.00	19
✓	53	0.00	19
✓	53	0.00	19
✓	52	0.00	20
✓	52	0.00	19
✓	51	0.00	19

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http://www.tandfonline.com/doi/abs/10.1080/13691830601043497

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Journal of Ethnic and Migration Studies

Volume 33, Issue 1, 2007

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The Myth of Return: Dismissal, Survival or Revival? A Bradford Example of Transnationalism as a Political Instrument

DOI: 10.1080/13691830601043497

Marta Bolognani^{*}

pages 59-76

Publishing models and article dates explained

Published online: 23 Jan 2007

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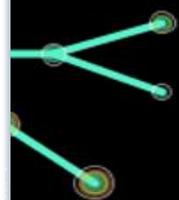
Accept

点

q2 ... # clusters

2012 2013 2014

I, IMAGINED CO



注意的问题

➤ 文献信息检索基础匮乏

不当的文献信息检索策略得到的数据或不能准确地反映所研究的内容。

➤ 原理概念认识不够清楚

- 对软件基本原理以及科学计量学的基本概念、原理和方法认识不够清楚；
- 对图谱解读语言不规范（错误解读、过度解读、遗漏解读等）——向本领域的不同专家咨询；

➤ 分析结果混乱

- 通过图谱，读者不能比较容易地得到论文中所论述的问题。

原因：图谱信息量过载

注意的问题

➤ 过程表述不明

- 清楚说明论文的数据来源、采集方法（采集时间）、分析中的参数配置等
- 对特定数据使用citespace进行的研究是很容易重复。

三、应用举例

CNKI
WOS

确定主题：资源聚合研究（1998-2018）

- 关于国内外资源聚合研究，在CNKI数据库中进行检索，通过CiteSpace探讨近二十年国内资源聚合的学术成果分布与合作、研究前沿等。

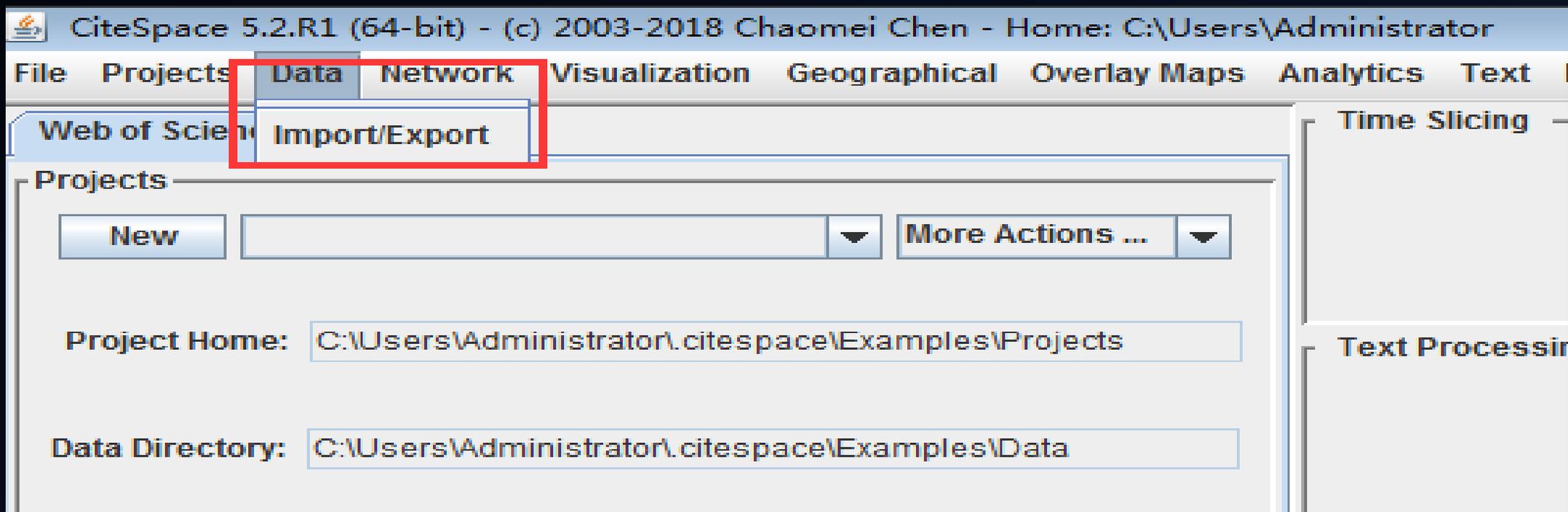
CNKI——数据准备

- 1、下载数据
- 以主题词=“资源聚合” OR 主题词=“信息聚合”，时间限定在1998-2018，在期刊、硕博士数据库中进行检索，清洗后得到812条记录，导出“Refwoeks”格式，并命名为“download_XXX格式”，并保存在input文件夹中。

 data	2018/3/27 17:57	文件夹
 input	2018/3/27 18:59	文件夹
 output	2018/3/27 18:59	文件夹
 project	2018/3/27 18:59	文件夹

2、数据格式转换

- 在CiteSpace的Data—Import/Export中进行转换，转换后的数据自动保存在output文件夹中，再将output中的所有文件复制到data文件中。



ADS arXiv CNKI CSSCI 2.0 Derwent* NSF ProQuest

CiteSpace Built-in Database

WOS

Scopus

CrossRef

PubMed

Input Directory E:\2018年-citespace培训\CNKI\citespace\input

Browse

Output Directory E:\2018年-citespace培训\CNKI\citespace\output

Browse

Format Conversion

转换成功会显示
“Finished”

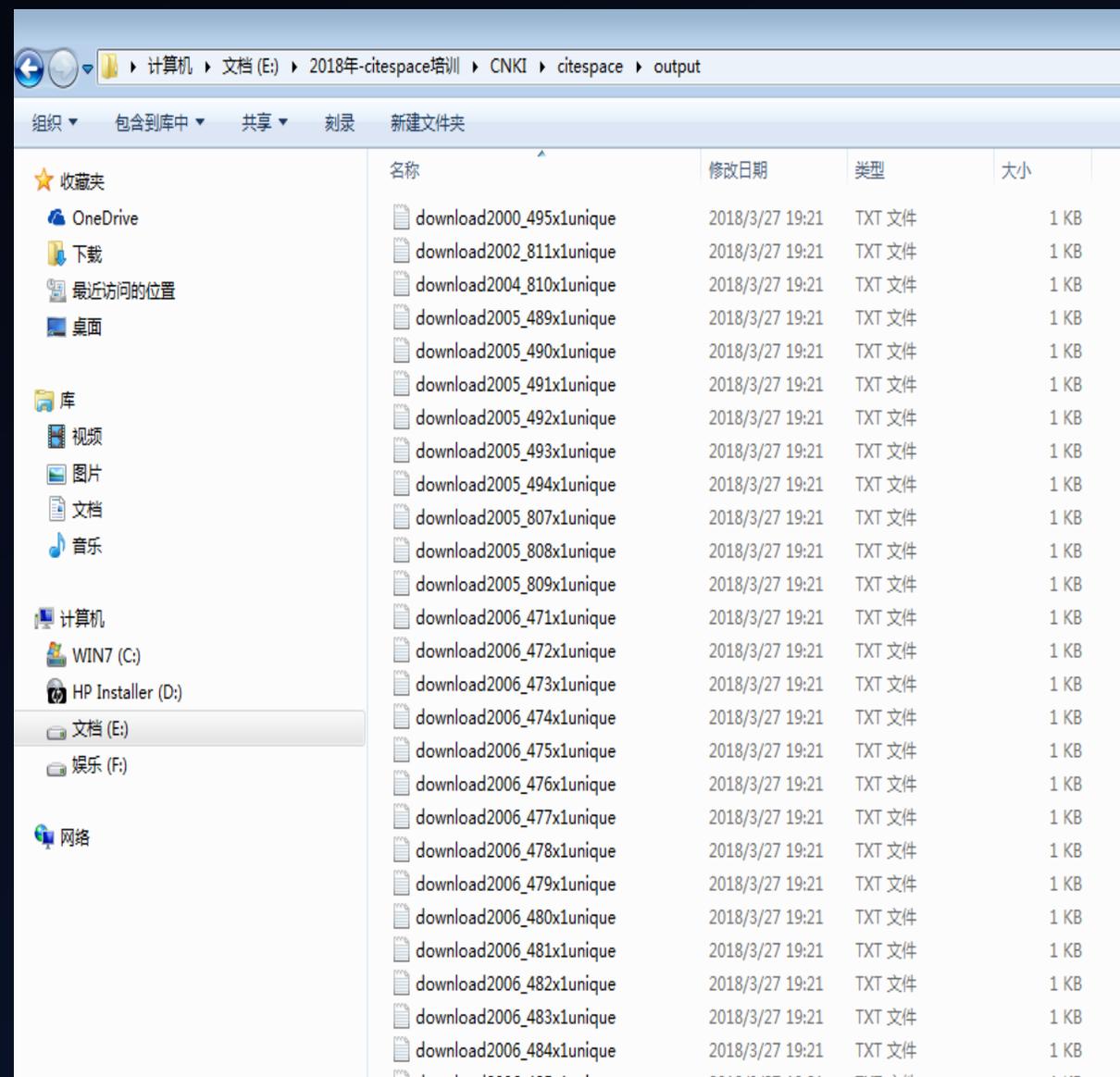
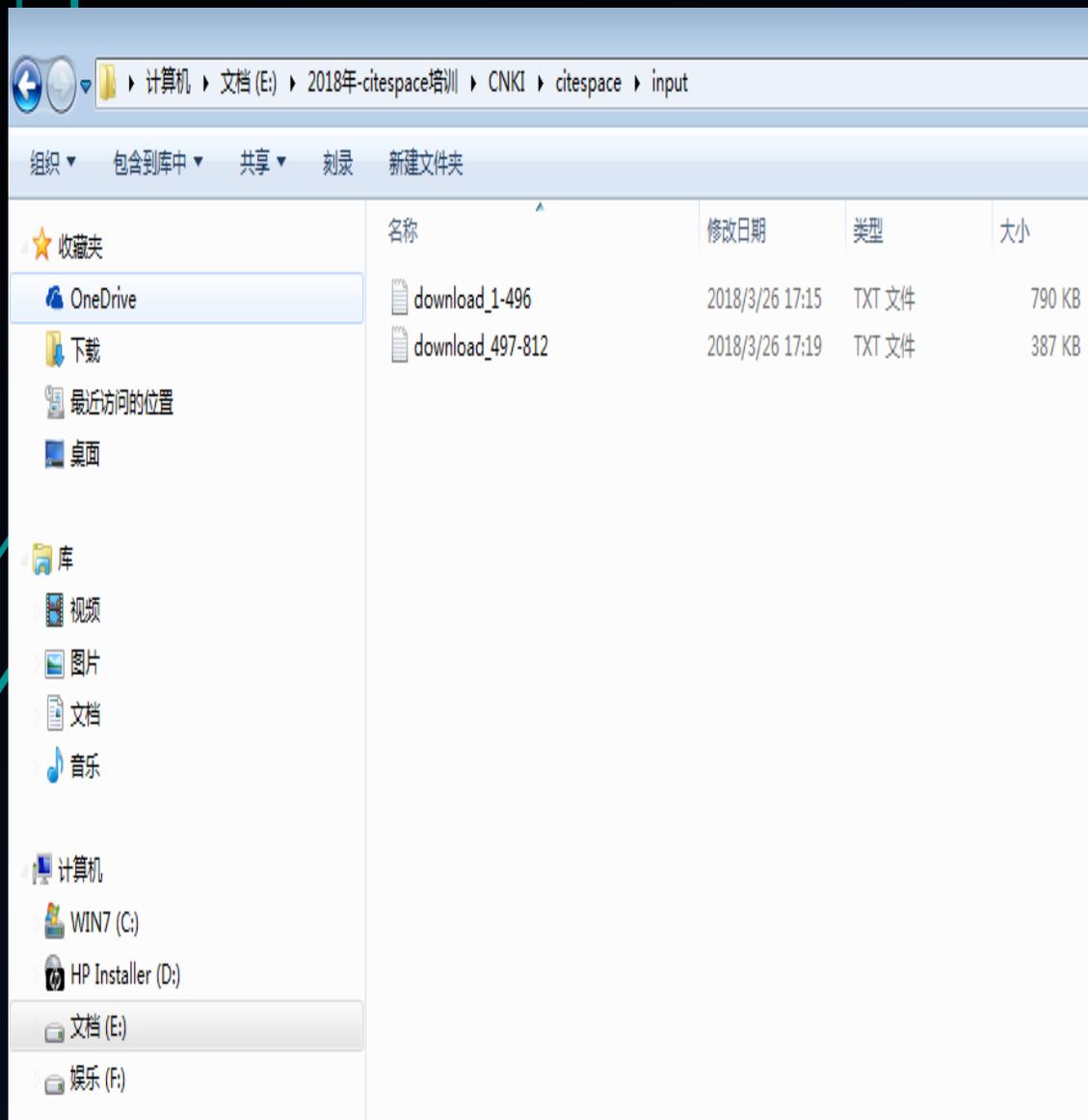
Information

Inputfile: E:\2018年-citespace培训\CNKI\citespace\input

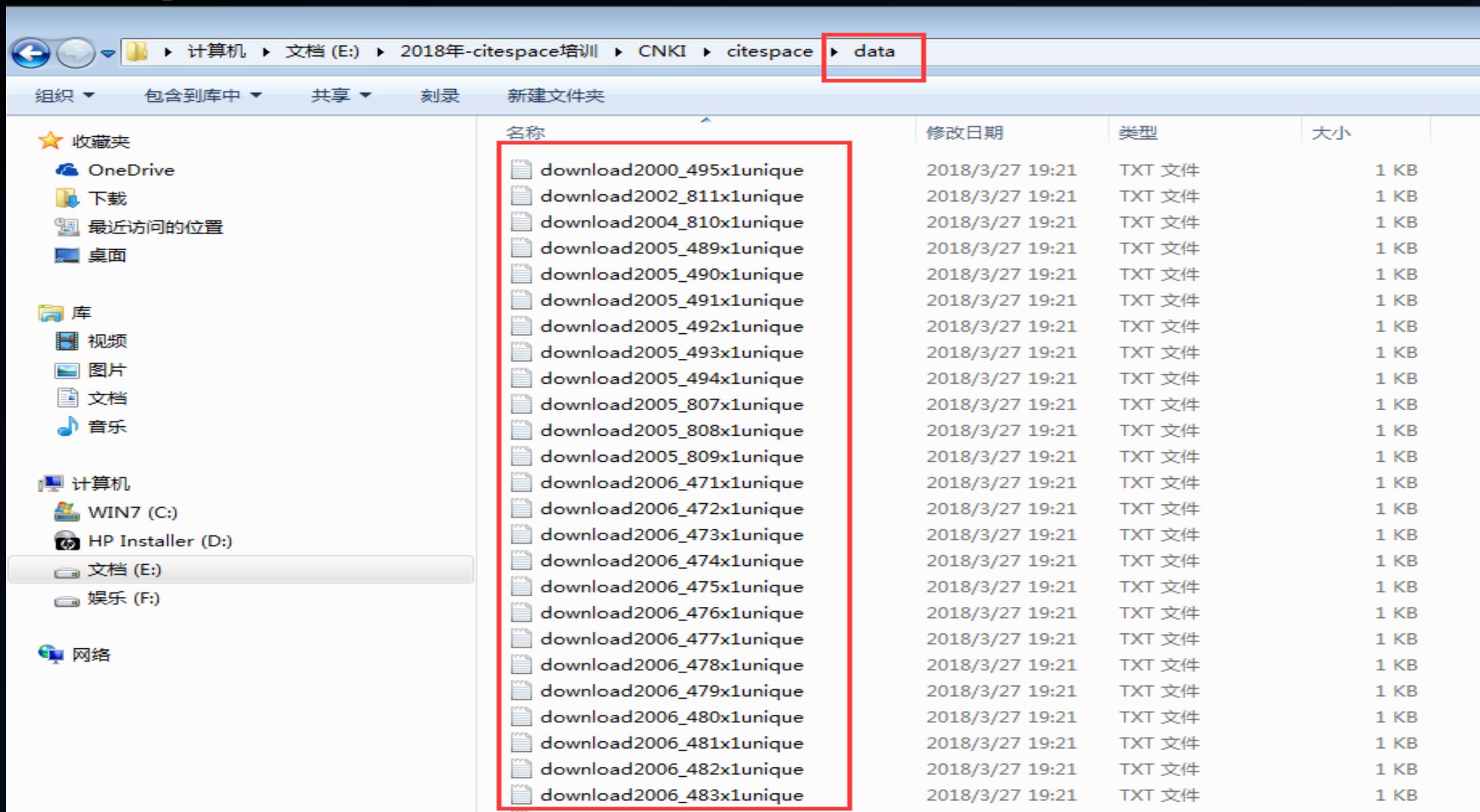
Outputfile: E:\2018年-citespace培训\CNKI\citespace\output

Finished!

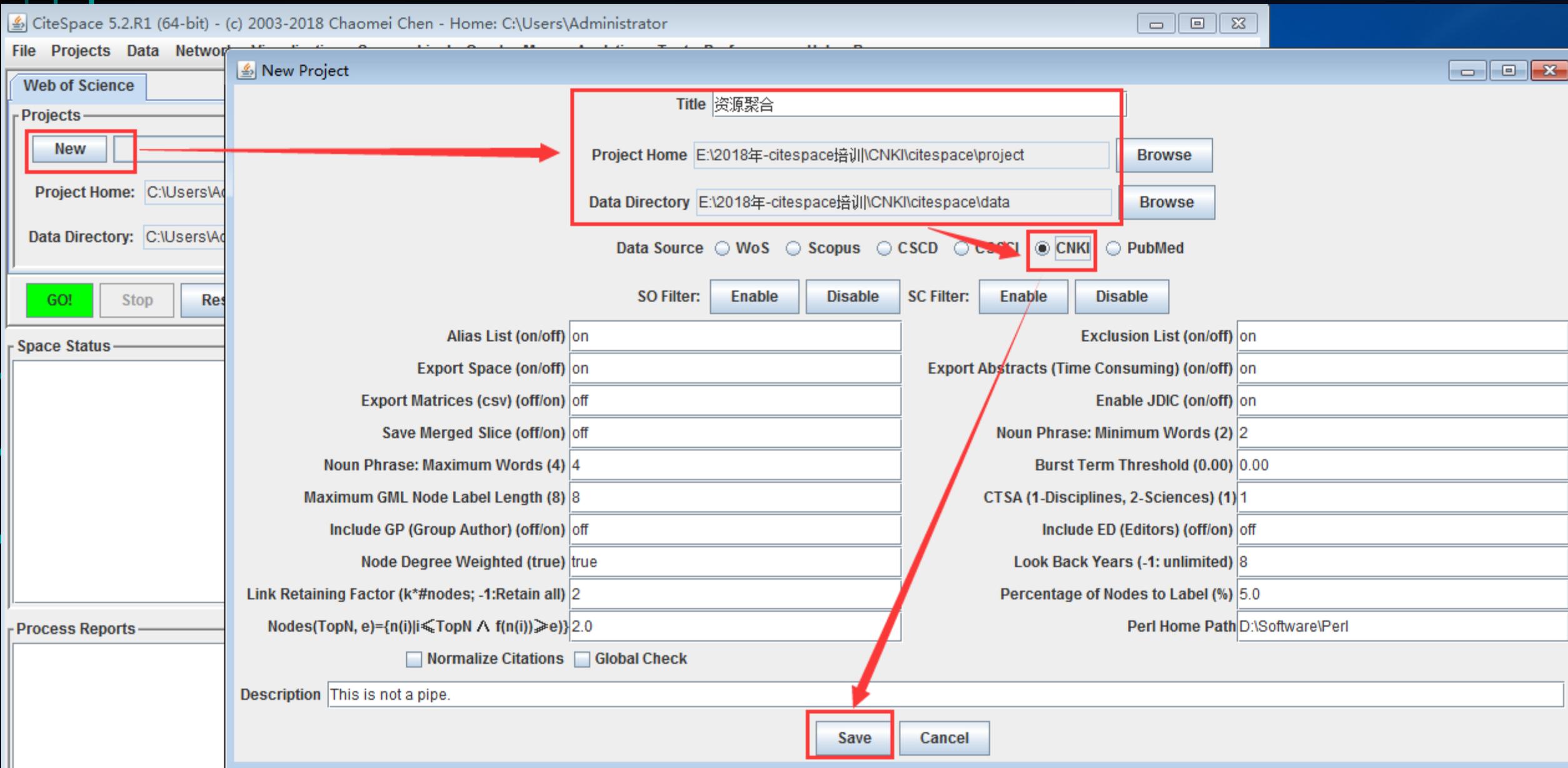
• 数据转换前（左）后（右）对比



- 将output文件夹内容复制到data文件夹中



3、建立project



4、项目设置

The screenshot shows the CiteSpace 5.2.R1 (64-bit) application window. The title bar indicates the user is Administrator on a CO-DESC system. The menu bar includes File, Projects, Data, Network, Visualization, Geographical, Overlay Maps, Analytics, Text, Preferences, Help, and Resources. The main interface is divided into several panels:

- Web of Science** (selected):
 - Projects**: A dropdown menu shows '资源聚合'. Below it are 'New', 'More Actions ...', 'Project Home: E:\2018年-citespace培训\CNKI\citespace\project', and 'Data Directory: E:\2018年-citespace培训\CNKI\'. A green 'GO!' button is highlighted with a red box.
 - Time Slicing**: A red box highlights the 'From 1998', 'To 2018', and '#Years Per Slice 1' settings.
 - Text Processing**: Includes a 'Term Source' dropdown and buttons for 'Near Phrases', 'Burst Terms', 'Select Bursts', and 'Entropy'.
 - Strength**: Set to 'Cosine'.
 - Scope**: Set to 'Within Slices'.
 - Selection Criteria**: Includes tabs for 'Top N', 'Top N%', 'g-index', 'Thresholds', 'Citations', 'Usage180', and 'Usage2013'. The 'Top N' tab is active, showing 'Select top 50 levels of most cited or occurred items from each slice. Each level may include multiple qualified nodes. The minimum level e is set in the project properties.'
 - Pruning**: Includes a 'Pruning' tab with options: 'Pathfinder' (checked), 'Minimum Spanning Tree' (unchecked), 'Pruning sliced networks' (unchecked), and 'Pruning the merged network' (checked). A red box highlights these options.
- Space Status**: An empty panel for displaying network analysis results.
- Process Reports**: An empty panel for displaying process logs.

用CNKI导出的数据为什么无法做被引分析？

因为CNKI导出的数据中不包含reference选项，也就是不提供参考文献数据，所以不能做引文分析

Web of Science

Projects

New

资源聚合

More Actions ...

Project Home: E:\2018年-citespace培训\CNKI\citespace\project

Data Directory: E:\2018年-citespace培训\CNKI\citespace\data

GO!

Stop

Reset

JVM Memory

794

(MB) Used

11 %

Space Status

2009-2009	top 50	186	31
2010-2010	top 50	212	22
2011-2011	top 50	169	17
2012-2012	top 50	197	15
2013-2013	top 50	222	32
2014-2014	top 50	378	41
2015-2015	top 50	289	37
2016-2016	top 50	353	48
2017-2017	top 50	290	24
2018-2018	top 50	35	2

Process Reports

Records in the dataset: 1

Records within the chosen range: 809

Document Types

Parsing Time: 1 seconds

Total Run time: 13 seconds

Merged network: Nodes=166, Links=436

Exclusion List: 0

Time Slicing

From 1998

To 2018

#Years Per Slice 1

Text Processing

Term Source

 Title Abstract Author Keywords (DE) Keywords Plus (ID)

Term Type

Terms

Detect Bursts

Entropy

 Term Keyword Source Category Cited Journal Paper Grant

Scope

Within Slices

Your Options



Title: 资源聚合

Range: [2000, 2018]

Records: 812

References: 0

How do you like to proceed?

Visualize

Save As GraphML

Cancel

Top N

Top N%

g-index

Thresholds

Citations

Usage180

Usage2013

Select top 50 levels of most cited or occurred items from each slice.

Each level may include multiple qualified nodes.

The minimum level e is set in the project properties.

Pruning

Visualization

Pruning

 Pathfinder Minimum Spanning Tree Pruning sliced networks Pruning the merged network

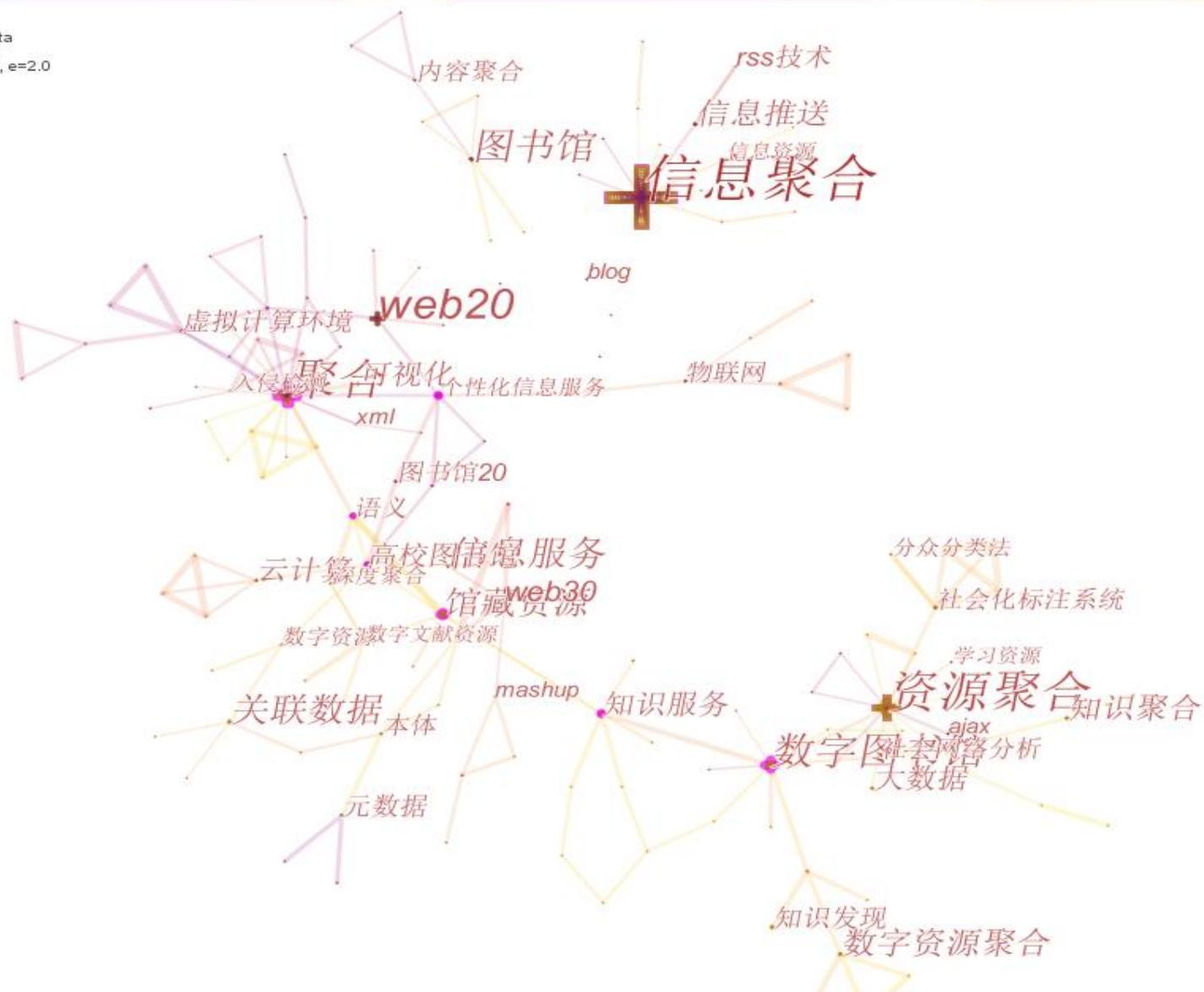
5、可视化——时区图：显示的是每个时区最热门的话题



5、可视化——关键词共现

CiteSpace, v. 5.2.R1 (64-bit)
2018年3月27日 下午08时04分54秒
CNKI: E:\2018年-citespace培训\CNKI\citespace\data
Timespan: 1998-2018 (Slice Length=1)
Selection Criteria: Top 50 per slice, LRF=2, LBY=8, e=2.0
Network: N=166, E=202 (Density=0.0147)
Largest CC: 148 (89%)
Nodes Labeled: 5.0%
Pruning: Pathfinder

聚合算子



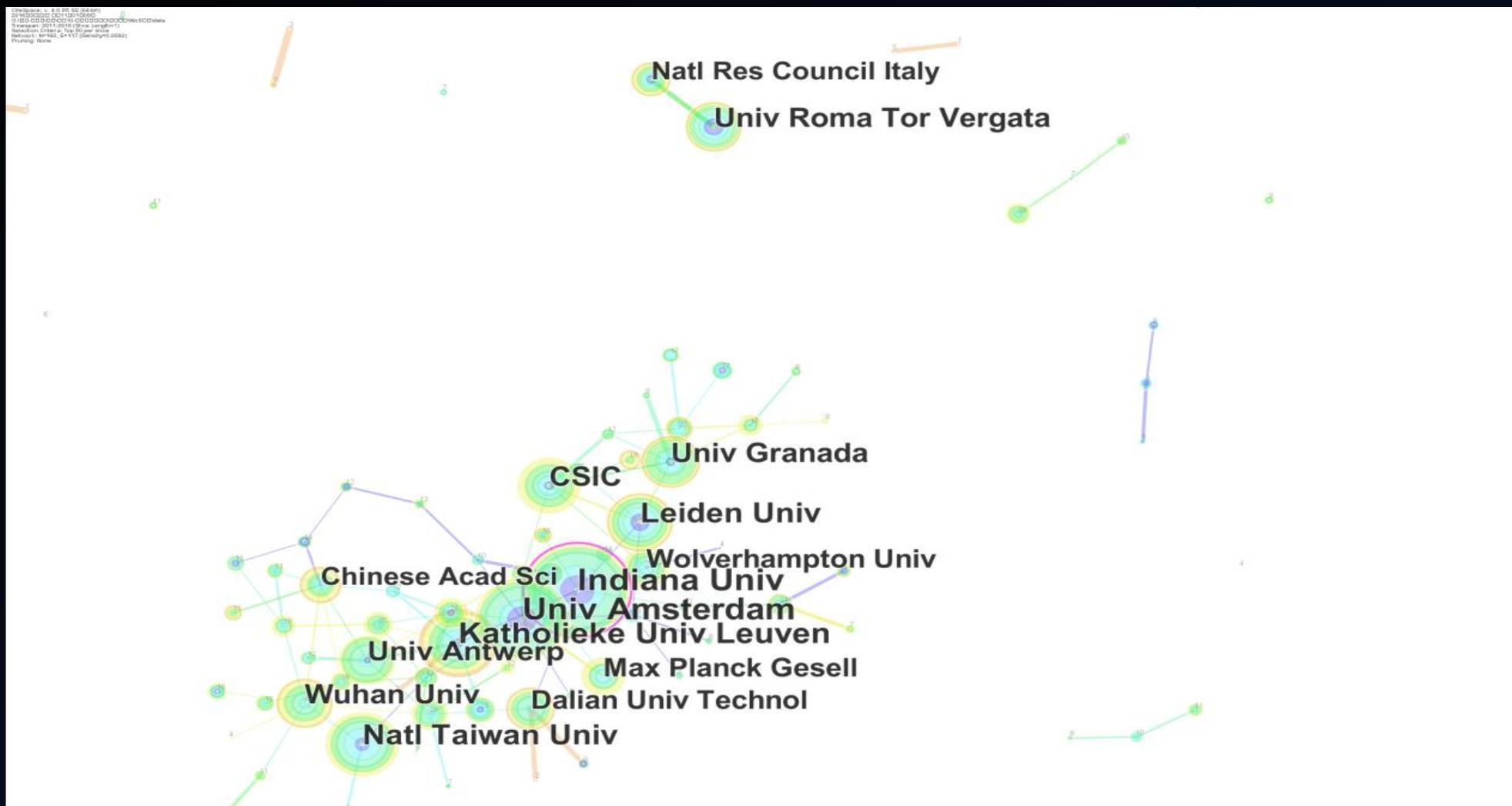
WoS

- **期刊:** 《Journal of Informetrics》、《SCIENTOMETRICS》、《JOURNAL OF THE AMERICAN SOCIETY FOR INFORMATION SCIENCE AND TECHNOLOGY》、《Journal of the Association for Information Systems》
- **时间:** 2011年至今
- **数据量:** 3002条记录

- 合作作者分析——高频作者名单

频次	作者	频次	作者
74	Bornmann L	34	Glanzel W
66	Leydesdorff L	33	Chen DZ
45	Abramo G	28	Egghe L
44	Rousseau R	26	Ding Y
43	D'Angelo CA	24	Sugimoto CR
42	Huang MH	22	Waltman L
37	Thelwall M	21	Cronin B

- 合作机构分析——了解网络计量学领域的主要机构及其之间的关系



• 合作机构分析——高频合作机构名单

频次	机构	频次	机构
74	Indiana Univ印第安纳大学	41	Univ Roma Tor Vergata罗马第二大学
65	Univ Amsterdam阿姆斯特丹大学	40	Univ Antwerp安特卫普大学
54	Natl Taiwan Univ国立台湾大学	36	Wolverhampton Univ 伍尔弗汉普顿大学
52	Katholieke Univ Leuven鲁汶大学	35	Dalian Univ Technol大连理工大学
48	Leiden Univ莱顿大学	34	Max Planck Gesell德国研究机构
46	CSIC西班牙国家研究委员会	32	Chinese Acad Sci中国科学院
44	Univ Granada格拉纳达大学	31	Natl Res Council Italy 意大利国家研究理事会
43	Wuhan Univ武汉大学		

- 高频合作国家-地区名单

频次	国家-地区	频次	国家-地区
539	USA美国	125	ITALY意大利
390	PEOPLES R CHINA中国	120	BELGIUM比利时
237	SPAIN西班牙	113	CANADA加拿大
169	NETHERLANDS荷兰	102	SOUTH KOREA韩国
167	GERMANY德国	91	AUSTRALIA澳大利亚
156	ENGLAND英国	61	INDIA印度
151	TAIWAN台湾		

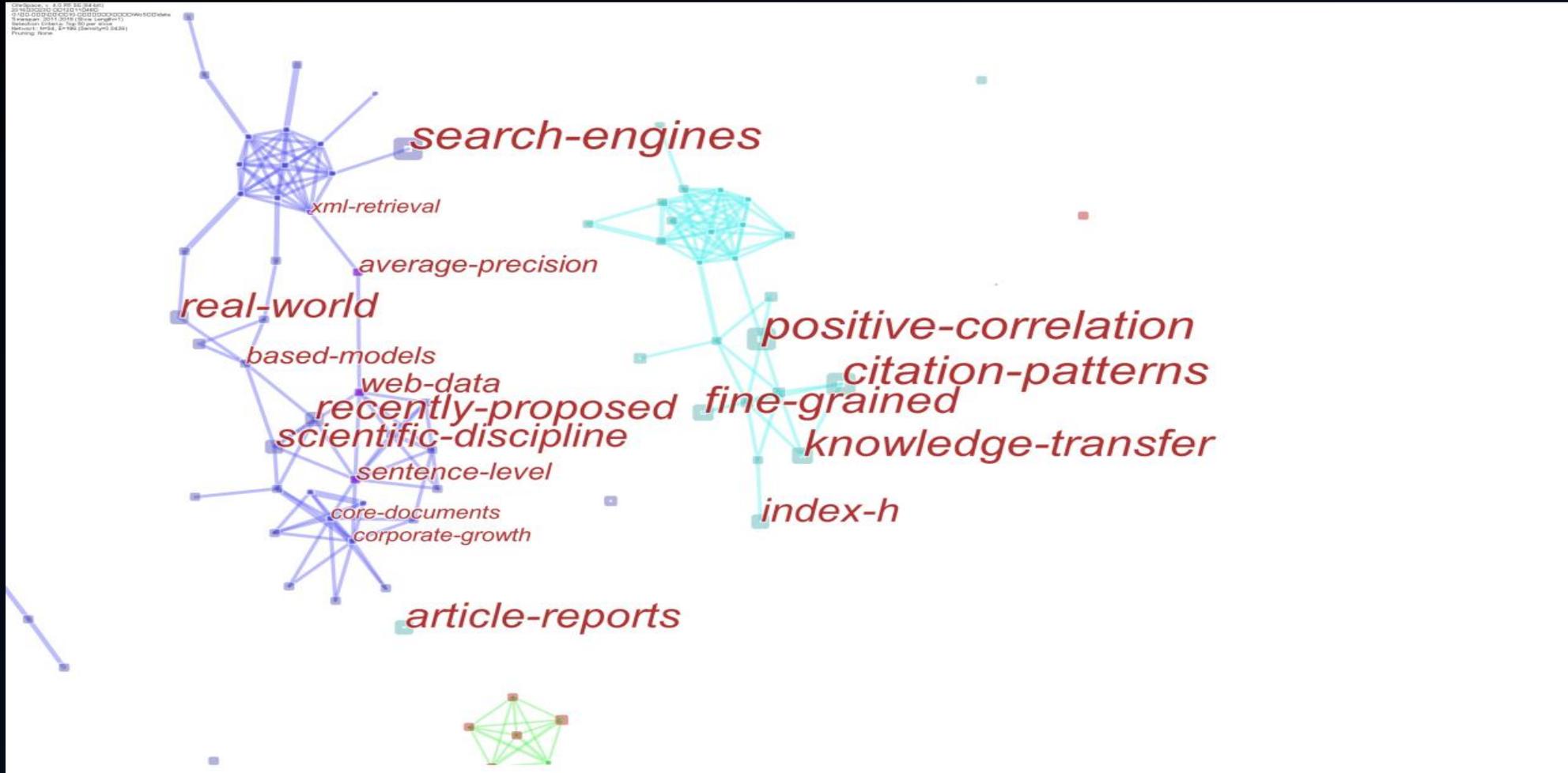
合作网络分析

- 小结

频次	作者		频次	作者	
74	Bornmann L	Max Planck Gesell 德国研究机构	34	Glanzel W	Katholieke Univ Leuven 鲁汶大学
66	Leydesdorff L	Univ Amsterdam 阿姆斯特丹大学	33	Chen DZ	Natl Taiwan Univ 国立台湾大学
45	Abramo G	Natl Res Council Italy 意大利国家研究理事会	28	Egghe L	Hasselt University (University of Limburg)
44	Rousseau R	Katholieke Univ Leuven 鲁汶大学	26	Ding Y	Indiana Univ 印第安纳大学
43	D'Angelo CA	Univ Roma Tor Vergata 罗马第二大学	24	Sugimoto CR	Indiana Univ 印第安纳大学
42	Huang MH	Natl Taiwan Univ 国立台湾大学	22	Waltman L	Leiden Univ 莱顿大学
37	Thelwall M	Wolverhampton Univ 伍尔弗汉普顿大学	21	Cronin B	Indiana Univ 印第安纳大学

2 共词分析

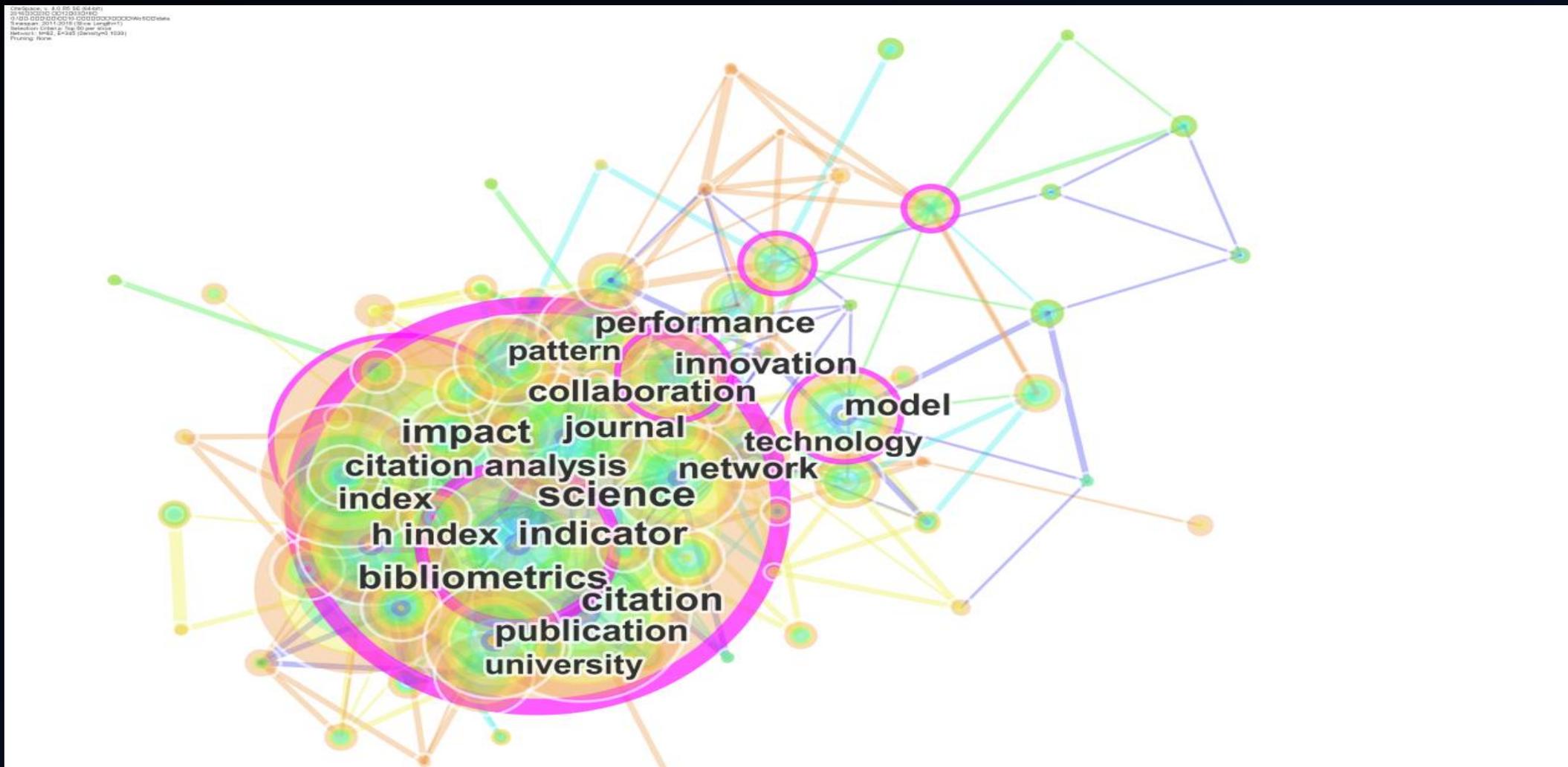
- **主题词共现分析**：发现当下的研究热点主题；利用Burst Term算法进行突发性检测，可用于研究前沿预测。



- 高频主题词表

频次	主题词	频次	主题词
10	search-engines	7	article-reports
10	positive-correlation	7	recently-proposed
10	impact-indicator	7	real-world
10	citation-patterns	6	index-h
8	knowledge-transfer	6	scientific-discipline
8	fine-grained		

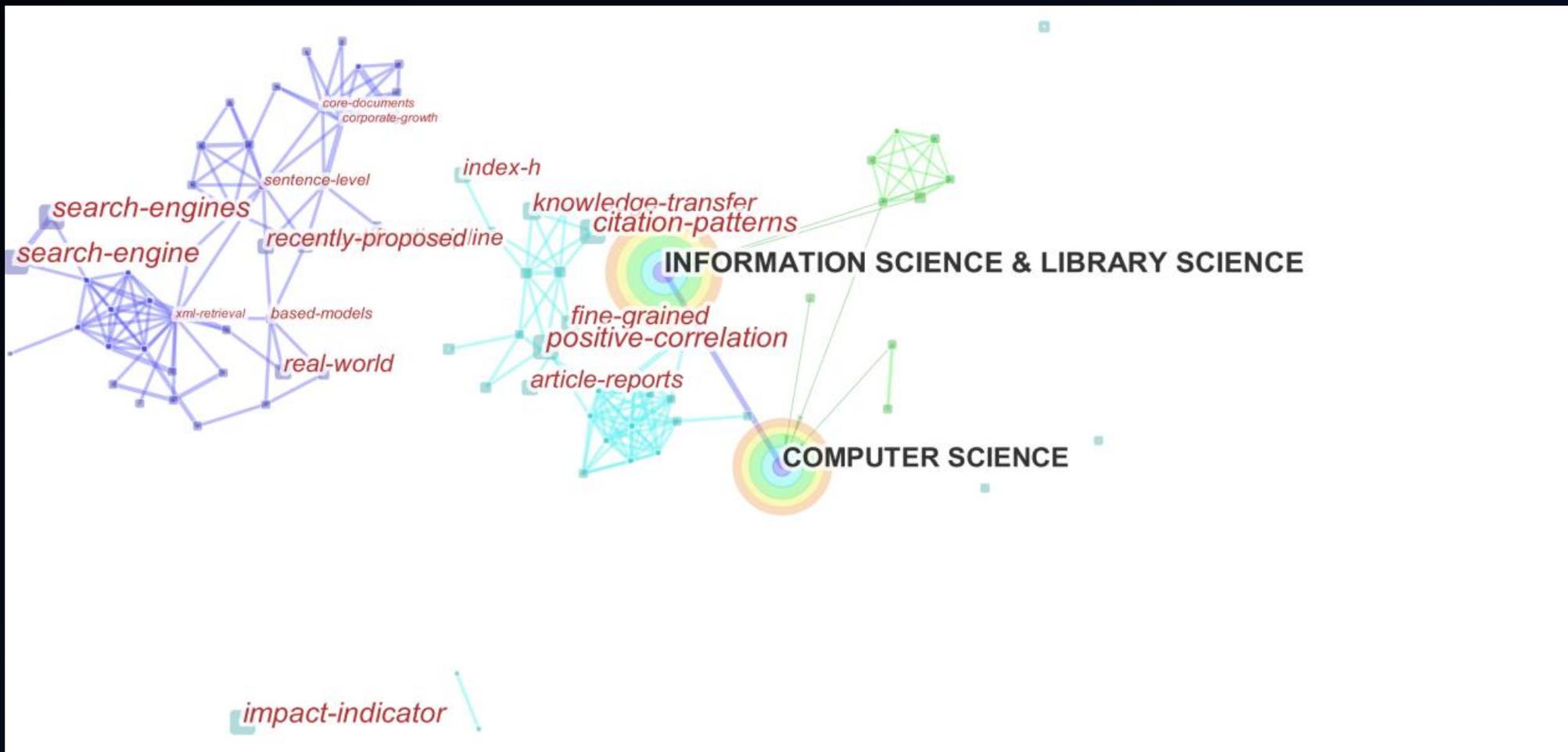
- **关键词共现分析：**一定程度上反映当下的研究热点，比主题词分析更深入；后期需要对关键词进行筛选和分类，结合文献调研总结得出当前的研究热点。



- 高频关键词表

频次	关键词	频次	关键词
597	science	187	network
332	impact	167	collaboration
284	citation	162	index
279	bibliometrics	161	performance
248	indicator	157	model
230	citation analysis	150	innovation
213	journal	147	pattern
200	h index	133	technology
197	publication	124	university

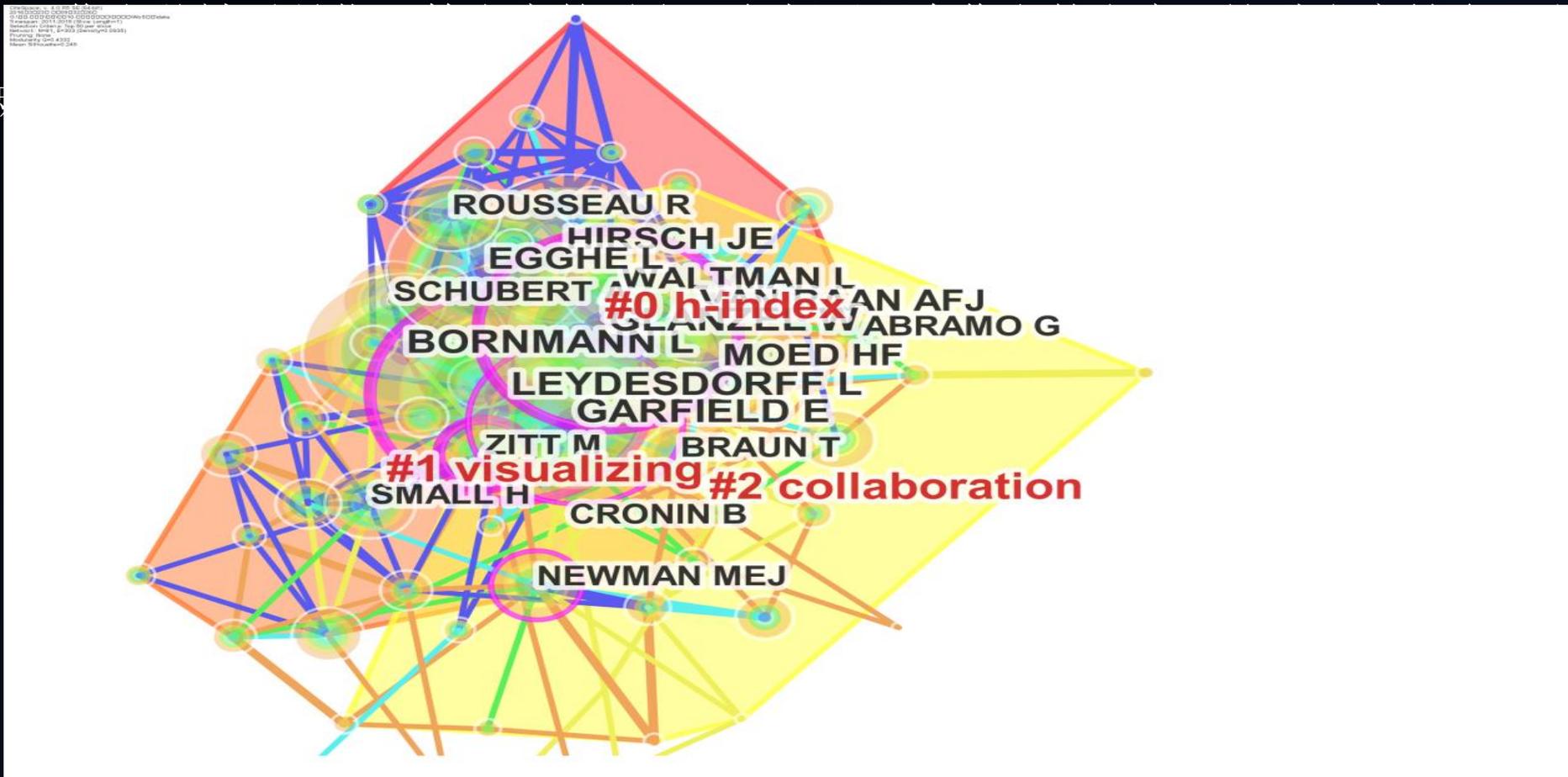
- 领域共现分析：可发现交叉学科涉及的领域基础



3 共被引分析

节点的大小代表文献、期刊或作者的被引频次、连线的颜色代表首次共被引的时间。

- 作者共被引分析



明这

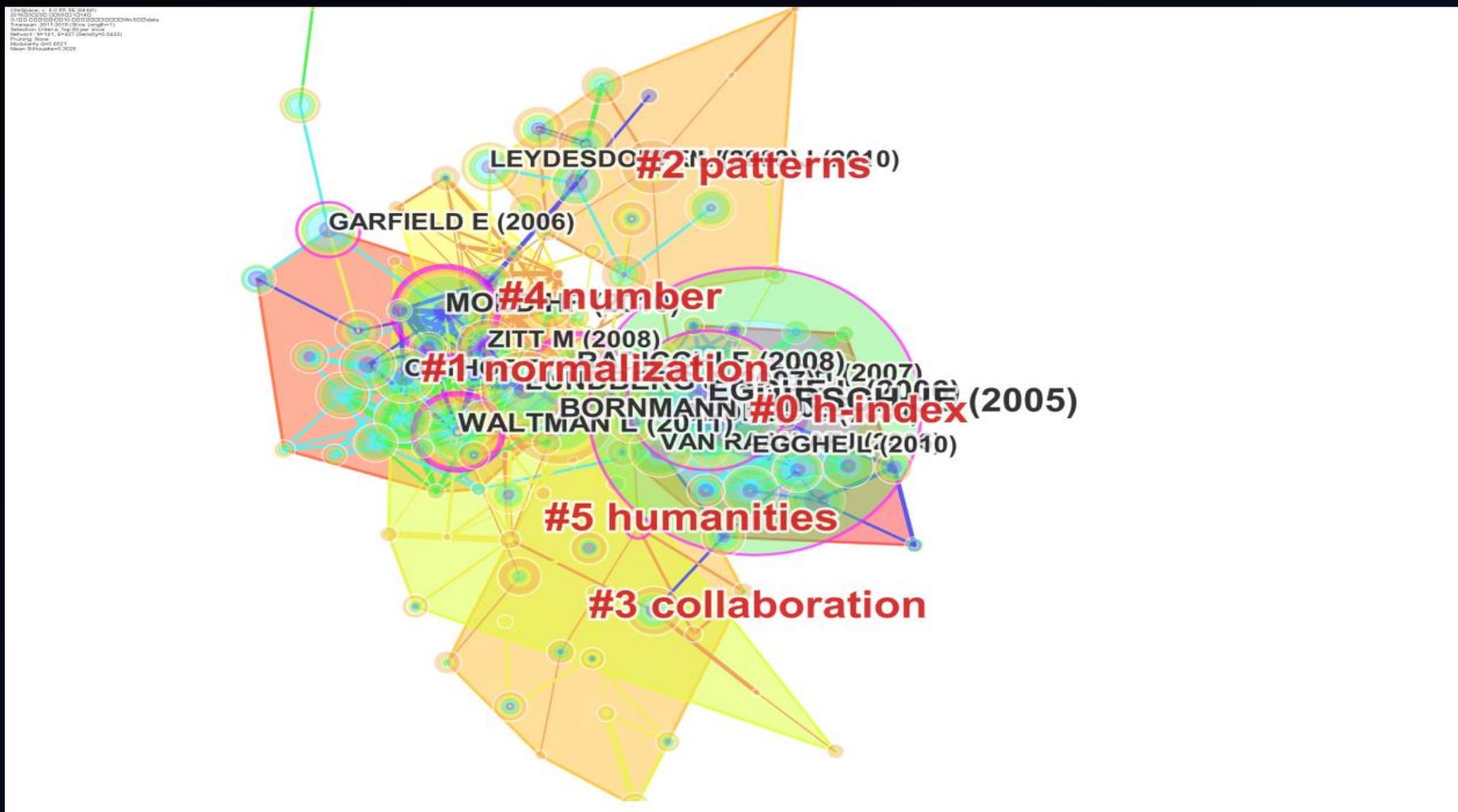
两

- 高频共被引作者名单

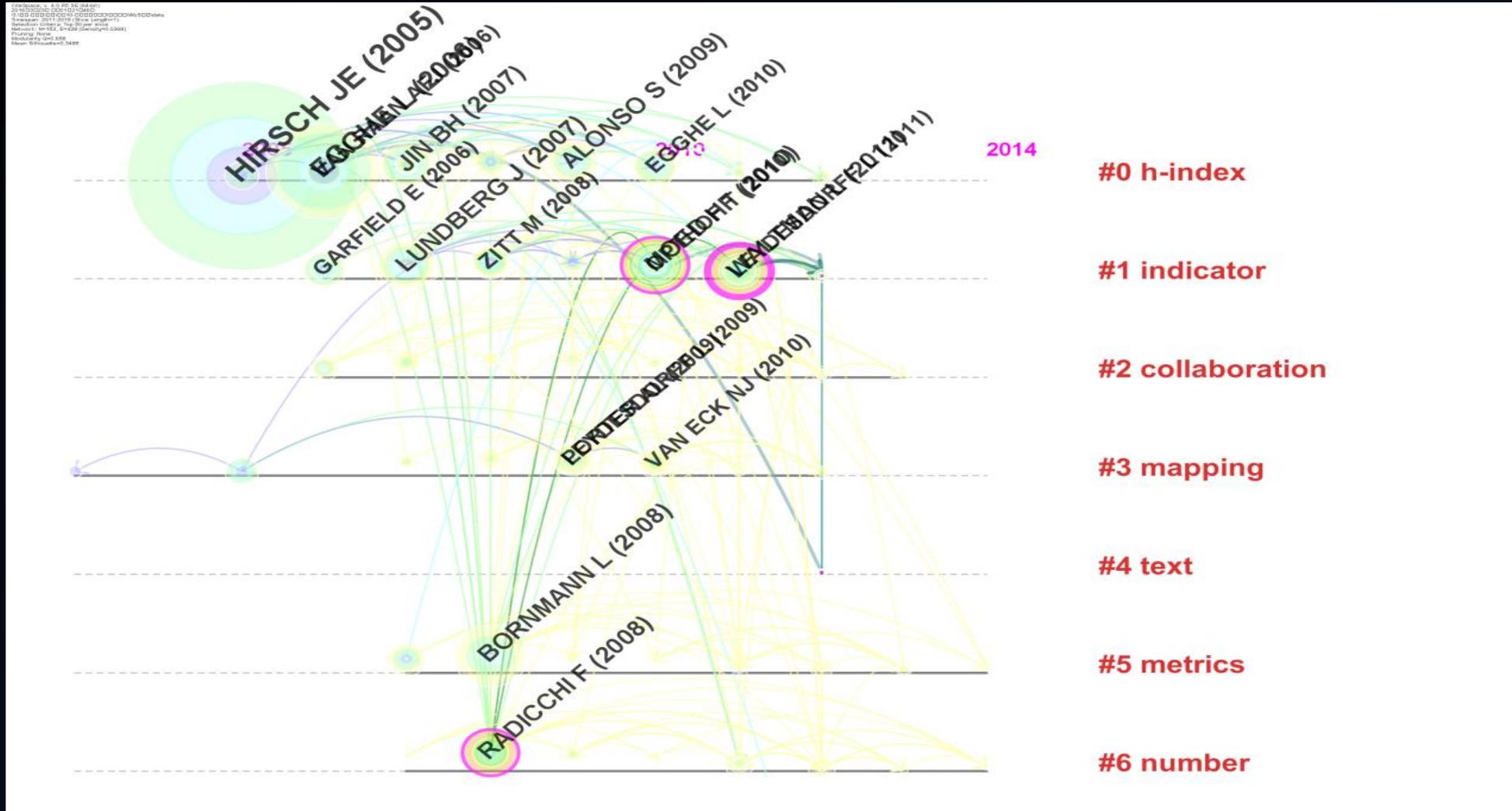
频次	作者	频次	作者
532	LEYDESDORFF L	215	SCHUBERT A
507	GLANZEL W	207	NEWMAN MEJ
432	GARFIELD E	207	ROUSSEAU R
421	BORNMANN L	193	CRONIN B
395	EGGHE L	188	SMALL H
389	HIRSCH JE	187	ABRAMO G
320	MOED HF	170	ZITT M
305	[ANONYMOUS]	168	BRAUN T
278	VAN RAAN AFJ	168	NARIN F
252	WALTMAN L		

- 文献高被引分析

发现一个领域的发展脉络和知识基础，通过聚类可得到该领域的主要研究方向和内容。



- 文献共被引时间轴分析



- 高频引文内容

频次	引用文献
261	HIRSCH JE, 2005, P NATL ACAD SCI USA, V102, P16569, DOI 10.1073/PNAS.0507655102
133	EGGHE L, 2006, SCIENTOMETRICS, V69, P131, DOI 10.1007/S11192-006-0144-7
88	BORNMANN L, 2008, J DOC, V64, P45, DOI 10.1108/00220410810844150
82	MOED HF, 2010, J INFORMETR, V4, P265, DOI 10.1016/J.JOI.2010.01.002
73	WALTMAN L, 2011, J INFORMETR, V5, P37, DOI 10.1016/J.JOI.2010.08.001
73	LUNDBERG J, 2007, J INFORMETR, V1, P145, DOI 10.1016/J.JOI.2006.09.007
71	RADICCHI F, 2008, P NATL ACAD SCI USA, V105, P17268, DOI 10.1073/PNAS.0806977105
66	ALONSO S, 2009, J INFORMETR, V3, P273, DOI 10.1016/J.JOI.2009.04.001
65	JIN BH, 2007, CHINESE SCI BULL, V52, P855, DOI 10.1007/S11434-007-0145-9
54	OPTHOF T, 2010, J INFORMETR, V4, P423, DOI 10.1016/J.JOI.2010.02.003
53	EGGHE L, 2010, ANNU REV INFORM SCI, V44, P65
53	LEYDESDORFF L, 2009, J AM SOC INF SCI TEC, V60, P348, DOI 10.1002/ASI.20967
53	ZITT M, 2008, J AM SOC INF SCI TEC, V59, P1856, DOI 10.1002/ASI.20880
52	GARFIELD E, 2006, JAMA-J AM MED ASSOC, V295, P90, DOI 10.1001/JAMA.295.1.90
52	VAN ECK NJ, 2010, SCIENTOMETRICS, V84, P523, DOI 10.1007/S11192-009-0146-3
51	VAN RAAN AFJ, 2006, SCIENTOMETRICS, V67, P491, DOI 10.1556/SCIENT.67.2006.3.10

- 高被引期刊名单

频次	期刊	频次	期刊
1948	SCIENTOMETRICS	371	ANNU REV INFORM SCI
1520	J AM SOC INF SCI TEC	364	PLOS ONE
1072	J INFORMETR	295	COMMUN ACM
796	J AM SOC INFORM SCI	290	J INF SCI
724	RES POLICY	284	SOC STUD SCI
687	P NATL ACAD SCI USA	265	MANAGE SCI
634	SCIENCE	229	J INFORM SCI
606	INFORM PROCESS MANAG	227	MIS QUART
568	NATURE	212	LECT NOTES COMPUT SC
450	J DOC	212	ORGAN SCI
420	RES EVALUAT		

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- [7]陈超美科学网博客.<http://blog.sciencenet.cn/home.php?mod=space&uid=496649>

谢谢!

Q&A