

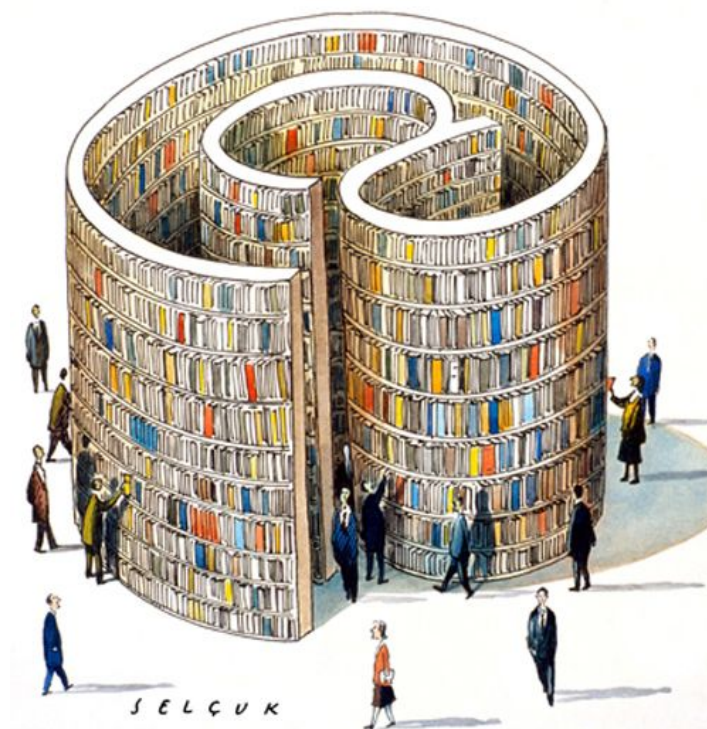
# 基于可视化软件的 重要文献与热点发掘

《中华急诊医学杂志》编辑部

张斯龙

2013年7月·成都

- 需要快速筛选所需文献
- 需要借用工具
- 首选适用于各个学科文献计量分析的免费软件



# 软件简介

## HistCite

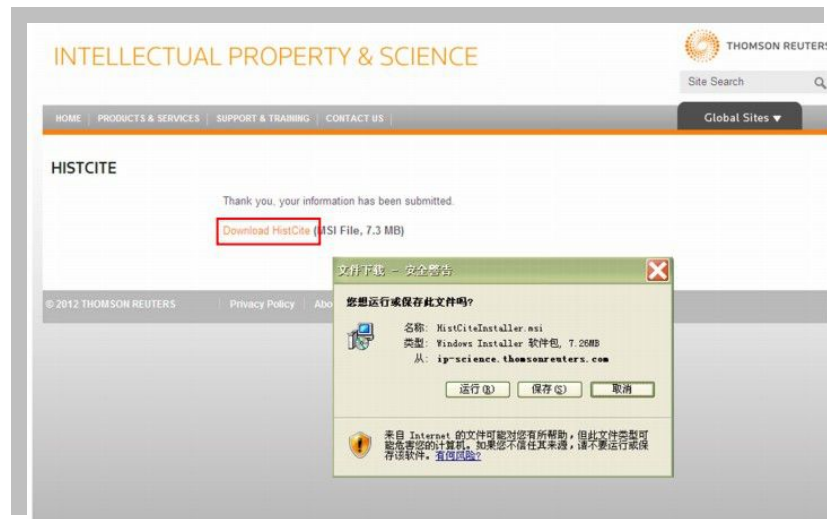
2001年由加菲尔德开发

下载地址：

[http://thomsonreuters.com/products\\_services/science/science\\_products/a-z/histcite/](http://thomsonreuters.com/products_services/science/science_products/a-z/histcite/)

适用范围：

学科文献大量收录于SCI中的学科或研究主题



# 软件简介

## CiteSpace II

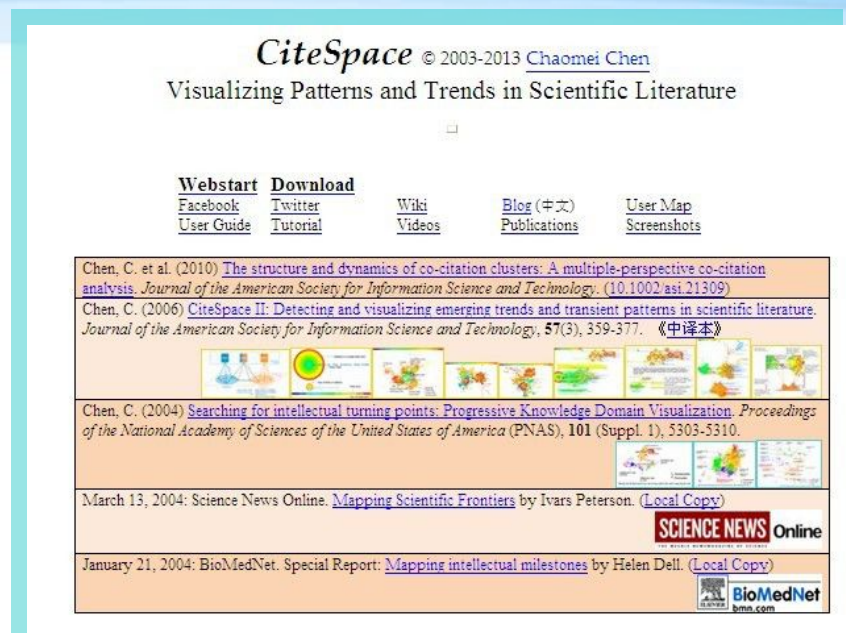
Drexel大学陈超美开发

下载地址：

<http://cluster.cis.drexel.edu/~cchen/citespace/>

主要功能：

能对多种文献检索结果进行共被引聚类、共词聚类、突发词监测、学科动态趋势的识别，并且以可视化的效果进行呈现。



**CiteSpace** © 2003-2013 [Chaomei Chen](#)  
Visualizing Patterns and Trends in Scientific Literature

**Webstart** **Download**  
[Facebook](#) [Twitter](#) [Wiki](#) [Blog \(中文\)](#) [User Map](#)  
[User Guide](#) [Tutorial](#) [Videos](#) [Publications](#) [Screenshots](#)

Chen, C. et al. (2010) [The structure and dynamics of co-citation clusters: A multiple-perspective co-citation analysis](#). *Journal of the American Society for Information Science and Technology*, (10.1002/asi.21309)

Chen, C. (2006) [CiteSpace II: Detecting and visualizing emerging trends and transient patterns in scientific literature](#). *Journal of the American Society for Information Science and Technology*, 57(3), 359-377. 《中译本》

Chen, C. (2004) [Searching for intellectual turning points: Progressive Knowledge Domain Visualization](#). *Proceedings of the National Academy of Sciences of the United States of America (PNAS)*, 101 (Suppl. 1), 5303-5310.

March 13, 2004: Science News Online. [Mapping Scientific Frontiers](#) by Ivars Peterson. (Local Copy)

January 21, 2004: BioMedNet. Special Report: [Mapping intellectual milestones](#) by Helen Dell. (Local Copy)

# 软件简介

## CiteSpace II 其他功能


- 通过引文网络分析，找出学科领域演化的关键路径

找出学科领域演化的关键点文献（知识拐点）

分析学科前沿热点

探测学科知识基础

# 在wos中进行检索

ISI Web of Knowledge<sup>SM</sup> 领先一步 

所有数据库 | 选择一个数据库 | Web of Science | 其他资源

检索 | 被引参考文献检索 | 化学结构检索 | 高级检索 | 检索历史 | 标记结果列表 (0)

Web of Science® - 现在可以同时检索会议录文献

检索:

检索范围 主题  
示例: oil spill\* mediterranean

AND  检索范围 作者  
示例: O'Brian C\* OR OBrian C\*  
您是否需要根据作者来查找论文? 请使用作者甄别工具。

AND  检索范围 出版物名称  
示例: Cancer\* OR Journal of Cancer Research and Clinical Oncology

添加另一字段 >>

当前限制: [隐藏限制和设置](#) (要永久保存这些设置, 请登录或注册。)

入库时间:

所有年份 (更新时间 2009-04-04)

从 1900-1914 至 2009 (默认为所有年份)

引文数据库:

Science Citation Index Expanded (SCI-EXPANDED)--1900-至今

Social Sciences Citation Index (SSCI)--1996-至今

标题=(cardio-pulmonary resuscitation) OR  
标题=(cardiopulmonary resuscitation) OR  
标题=(cardio pulmonary resuscitation) OR  
标题=(CPR)

文献纳入时间: 从1991年起至2012年

# HistCite运行的主界面

File Analyses View Tools Help

cardiopulmonary resuscitation 1991-2012

Grand Totals: LCS 10912, GCS 35277, CR 79339  
Collection span: 1991 - 2012

List of All Records

Records: 3189, Authors: 8142, Journals: 468, Cited References: 29433, Words: 3708

Yearly output | Document Type | Language | Institution | Institution with Subdivision | Country

< << < > >> >

#	Date / Author / Journal	LCS	GCS	LCR	CR
1	1560 Wik L, Kramer-Johansen J, Myklebust H, Sorebo H, Svensson L, et al. <b>Quality of cardiopulmonary resuscitation during out-of-hospital cardiac arrest</b> JAMA-JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. 2005 JAN 19; 293 (3): 299-304	169	453	7	33
2	1561 Abella BS, Alvarado JP, Myklebust H, Edelson DP, Barry A, et al. <b>Quality of cardiopulmonary resuscitation during in-hospital cardiac arrest</b> JAMA-JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. 2005 JAN 19; 293 (3): 305-310	140	407	12	36
3	1035 Hallstrom A, Cobb L, Johnson E, Copass M <b>Cardiopulmonary resuscitation by chest compression alone or with mouth-to-mouth ventilation</b> NEW ENGLAND JOURNAL OF MEDICINE. 2000 MAY 25; 342 (21): 1546-1553	108	248	1	16
4	1257 Berg RA, Sanders AB, Kern KB, Hilwig RW, Heidenreich JW, et al. <b>Adverse hemodynamic effects of interrupting chest compressions for rescue breathing during cardiopulmonary resuscitation for ventricular fibrillation cardiac arrest</b> CIRCULATION. 2001 NOV 13; 104 (20): 2465-2470	102	267	7	19
5	1036 Cobb LA, Fahrenbruch CE, Walsh TR, Copass MK, Olsufka M, et al. <b>Outcome of cardiopulmonary resuscitation prior to defibrillation in patients with out-of-hospital ventricular fibrillation</b> JAMA-JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. 1999 APR 7; 281 (13): 1182-1188	88	103	3	21
6	1255 Hilwig RW, Berg RA, Sanders AB, Ewy GA <b>Impact of intermittent chest compressions during cardiopulmonary resuscitation - Improved outcome during a simulated single lay-rescuer scenario</b> CIRCULATION. 2002 FEB 5; 105 (5): 645-649	97	237	7	18
7	1470 Aufderheide TP, Sigurdsson G, Pirralo RG, Yannopoulos D, McKnite S, et al. <b>Hyperventilation-induced hypotension during cardiopulmonary resuscitation</b> CIRCULATION. 2004 APR 27; 109 (16): 1960-1965	96	278	4	13
8	5505 Zaccaro GJ, Lombardi G, Gennis P <b>EFFECTS OF BYSTANDER CARDIOPULMONARY-RESUSCITATION AND SURVIVAL FOLLOWING OUT-OF-HOSPITAL CARDIAC-ARREST</b> JAMA-JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. 1995 DEC 27; 274 (24): 1922-1925	95	298	0	32
9	1374 Wik L, Hansen TB, Fylling F, Steen T, Vaagenes P, et al. <b>Delaying defibrillation to give basic cardiopulmonary resuscitation to patients with out-of-hospital ventricular fibrillation - A randomized trial</b> JAMA-JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. 2003 MAR 19; 289 (11): 1389-1395	86	225	3	22
10	454 Linde KE, Pfenngel AW, Pfenninger EG, Lindner IM, Strohmenger HU, et al. <b>VASOPRESSIN IMPROVES VITAL ORGAN BLOOD-FLOW DURING CLOSED-CHEST CARDIOPULMONARY-RESUSCITATION IN PIGS</b> CIRCULATION. 1995 JAN 1; 91 (1): 215-221	85	199	0	25
11	124 COHEN TJ, TUCKER KJ, LURIE KG, REDBERG RF, DUTTON JP, et al. <b>ACTIVE COMPRESSION-DECOMPRESSION - A NEW METHOD OF CARDIOPULMONARY-RESUSCITATION</b> JAMA-JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. 1992 JUN 3; 267 (21): 2916-2923	78	131	1	44
12	1567 Abella BS, Sanders AB, Passalunghi P, Alvarado JP, O'Hearn N, et al. <b>Chest compression rates during cardiopulmonary resuscitation are suboptimal - A prospective study during in-hospital cardiac arrest</b> CIRCULATION. 2005 FEB 1; 111 (4): 428-434	77	205	12	29
13	296 BERG RA, KERN KB, SANDERS AB, OTTO CW, HILWIG RW, et al. <b>BYSTANDER CARDIOPULMONARY-RESUSCITATION - IS VENTILATION NECESSARY</b> CIRCULATION. 1993 OCT; 88 (4): 1907-1915	76	164	5	58
14	1453 Wenzel V, Krismer AC, Arntz HR, Sitter H, Stadlbauer KH, et al. <b>A comparison of vasopressin and epinephrine for out-of-hospital cardiopulmonary resuscitation</b> NEW ENGLAND JOURNAL OF MEDICINE. 2004 JAN 8; 350 (2): 105-113	72	260	9	30

高被引论文基本  
题录信息

基本统计值  
文献记录总数  
(Records: 3189)  
作者总人次  
(Authors: 8142)  
期刊种数  
(Journals: 468)  
引用文献数  
(Cited References: 29433)  
关键词  
(Words: 3708)

本文献集内引用次数  
(local cited score, LCS)  
WOS中总被引用次数  
(global citation score, GCS)  
引了在本文献集内有的条数  
(local cited reference, LCR)  
文章引用的参考文献数量  
(cited reference, CR)

日期 (Date)  
作者姓名 (Author)  
期刊名称 (Journal),  
可排序

# 高被引论文获取

**GCS**

**global citation score**

该篇文献在WOS中总的被引用次数

在WOS中得到了较多的被引，具有广泛的覆盖面，是有影响力的重要文献

**LCS**

**local citation score**

该篇文献在当前检索数据集内被引用次数

在本数据记录范畴内获得了较多的引用，是与检索主题内容更为贴近的重要文献

**LCR**

**local citation references**

本地参考文献数：其参考文献在当前数据集中的数量

与该主题相关，可用于快速找到较新的相关度较高的文献或综述

# 引文编年图生成

The screenshot shows the HistCite - Graph Maker interface. On the left, there are several blue callout boxes with arrows pointing to specific parts of the software:

- 绘图命令按钮** (Drawing command button) points to the 'Make graph' button.
- 选择类型、阈值** (Select type, threshold) points to the 'Select by' section, specifically 'LCS value' and 'Limit: 30'.
- 节点选项** (Node options) points to the 'Node' section, including 'Shape: circle' and 'Size: Scale \* 1'.
- 显示选项** (Display options) points to the 'Display' section, including 'Draw links' and 'Info'.
- 文献编号** (Literature numbers) points to the list of references at the bottom.

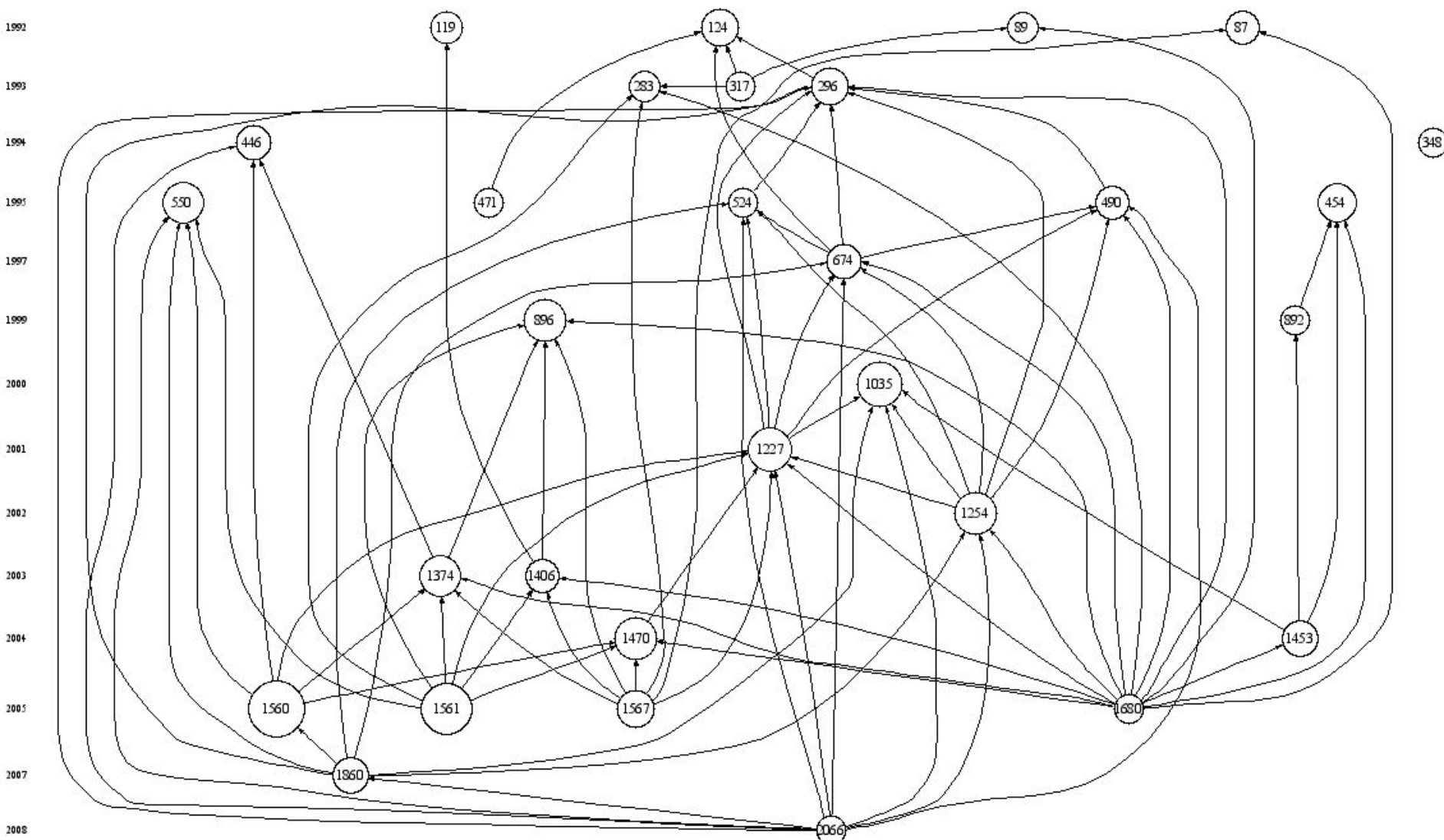
At the top right, a blue box labeled **保存或打印** (Save or print) points to the menu items: 'Print graph', 'Print text', 'Keep graph', and 'PostScript (Letter pages: 1)'.

The main area displays a network graph with 30 nodes and 81 links. Below the graph, a table lists the selected references:

		LCS	GCS
1.	<a href="#">87</a> KERN KB, 1992, ARCH INTERN MED, V152, P145	60	97
2.	<a href="#">89</a> SACK JB, 1992, JAMA-J AM MED ASSOC, V267, P379	54	108
3.	<a href="#">119</a> TUNSTALLPEDOE H, 1992, BRIT MED J, V304, P1347	56	189
4.	<a href="#">124</a> COHEN TJ, 1992, JAMA-J AM MED ASSOC, V267, P2916	78	131
5.	<a href="#">282</a> HALDERIN HR, 1992, NEW ENGL J MED, V320, D762	52	04

A blue box labeled **筛得的题录** (Filtered references) points to this table.

以LCS值取TOP 30节点为例，得到图表



引文编年图 (LCS=30)

多数情况下，那些节点较大，并有很多箭头指向的文章，是当年这个领域的重要著作  
 某些发出的引用指向少但受到引用次数多的文章，可能是当时开创新领域或新切入点的创新型研究。

# 根据LCS筛选的30篇高被引论文

文献序号	题目名	刊出卷期	LCS值	GCS值
<a href="#">87</a>	A STUDY OF CHEST COMPRESSION RATES DURING CARDIOPULMONARY-RESUSCITATION IN HUMANS - THE IMPORTANCE OF RATE-DIRECTED CHEST COMPRESSIONS	KERN KB, 1992, ARCH INTERN MED, V152, P145	60	97
<a href="#">89</a>	SURVIVAL FROM IN-HOSPITAL CARDIAC-ARREST WITH INTERPOSED ABDOMINAL COUNTERPULSATION DURING CARDIOPULMONARY-RESUSCITATION	SACK JB, 1992, JAMA-J AM MED ASSOC, V267, P379	54	108
<a href="#">119</a>	SURVEY OF 3765 CARDIOPULMONARY RESUSCITATIONS IN BRITISH HOSPITALS (THE BRESUS STUDY) - METHODS AND OVERALL RESULTS	TUNSTALLPEDOE H, 1992, BRIT MED J, V304, P1347	56	189
<a href="#">124</a>	ACTIVE COMPRESSION-DECOMPRESSION - A NEW METHOD OF CARDIOPULMONARY-RESUSCITATION	COHEN TJ, 1992, JAMA-J AM MED ASSOC, V267, P2916	78	131
<a href="#">283</a>	A PRELIMINARY-STUDY OF CARDIOPULMONARY-RESUSCITATION BY CIRCUMFERENTIAL COMPRESSION OF THE CHEST WITH USE OF A PNEUMATIC VEST	HALPERIN HR, 1993, NEW ENGL J MED, V329, P762	53	94
<a href="#">296</a>	BYSTANDER CARDIOPULMONARY-RESUSCITATION - IS VENTILATION NECESSARY	BERG RA, 1993, CIRCULATION, V88, P1907	76	164
<a href="#">317</a>	A COMPARISON OF ACTIVE COMPRESSION-DECOMPRESSION CARDIOPULMONARY-RESUSCITATION WITH STANDARD CARDIOPULMONARY-RESUSCITATION FOR CARDIAC ARRESTS OCCURRING IN THE HOSPITAL	COHEN TJ, 1993, NEW ENGL J MED, V329, P1918	49	92
<a href="#">348</a>	THE INFLUENCE OF THE PROBABILITY OF SURVIVAL ON PATIENTS PREFERENCES REGARDING CARDIOPULMONARY-RESUSCITATION	MURPHY DJ, 1994, NEW ENGL J MED, V330, P545	47	325
<a href="#">446</a>	QUALITY OF BYSTANDER CARDIOPULMONARY-RESUSCITATION INFLUENCES OUTCOME AFTER PREHOSPITAL CARDIAC-ARREST	WIK L, 1994, RESUSCITATION, V28, P195	66	181
<a href="#">454</a>	VASOPRESSIN IMPROVES VITAL ORGAN BLOOD-FLOW DURING CLOSED-CHEST CARDIOPULMONARY-RESUSCITATION IN PIGS	LINDNER KH, 1995, CIRCULATION, V91, P215	80	179
<a href="#">471</a>	IMPROVING ACTIVE COMPRESSION-DECOMPRESSION CARDIOPULMONARY-RESUSCITATION WITH AN INSPIRATORY IMPEDANCE VALVE	LURIE KG, 1995, CIRCULATION, V91, P1629	48	94
<a href="#">472</a>	BYSTANDER CARDIOPULMONARY-RESUSCITATION - CONCERNS ABOUT MOUTH-TO-MOUTH	LOCKE CL, 1995, ARCH INTERN		

- 大部份论文均有发出和受到箭头指向，分别代表引用与被引用，表明心肺复苏研究的文章不仅在参考文献数量（CR）上多，而且前后交叉引用较多，是有广泛开展且较为系统的持续研究。
- 不足之处在于单纯以被引频次为测度，近几年的文献无法与早期文献被引上达到同样的积累。

# Citespace II

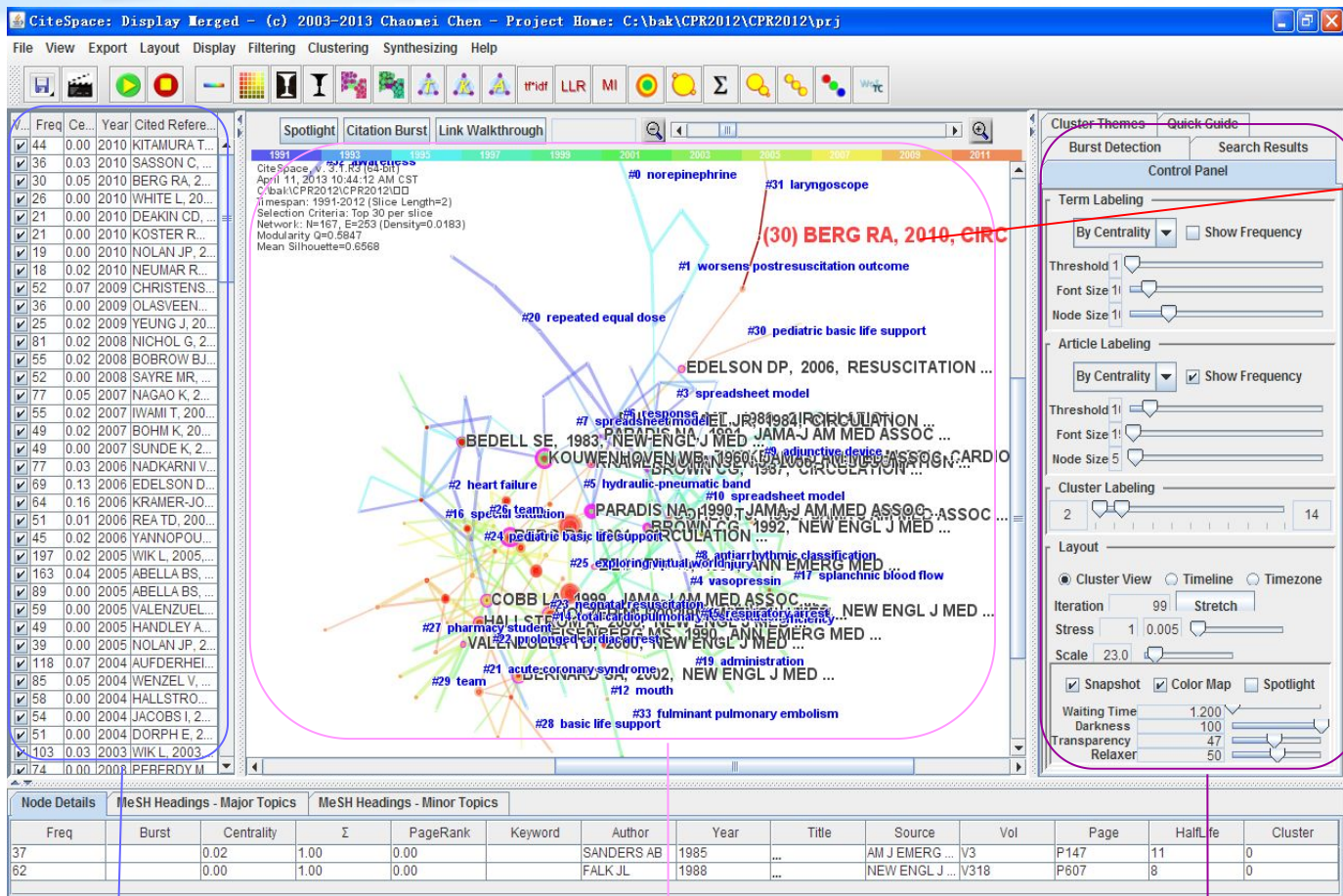
- 上述题录同时导入Citespace II 中进行运行，选择相应的聚类对象与参数

The screenshot shows the Citespace II 3.5.R7 interface with the following annotations:

- 项目存放位置** (Project storage location): Points to the Home Directory field.
- 文献题录存放位置** (Literature record storage location): Points to the Search Results field.
- 选择导入数据年代** (Select import data year): Points to the 'From' and 'To' date pickers.
- 选择数据切分年代** (Select data slicing year): Points to the '#Years Per Slice' dropdown.
- 选择聚类词来源** (Select clustering word source): Points to the 'Term Source' checkboxes (Title, Abstract, Author Keywords, etc.).
- 共引作者** (Co-cited authors): Points to the 'Author' radio button under 'Term Type'.
- 共引机构** (Co-cited institutions): Points to the 'Institution' radio button.
- 共引国别** (Co-cited countries): Points to the 'Country' radio button.
- 主题词** (Subject terms): Points to the 'Term' radio button.
- 关键词** (Keywords): Points to the 'Keyword' radio button.
- 共引领域** (Co-cited fields): Points to the 'Category' radio button.
- 选择聚类点类型** (Select clustering point type): Points to the 'Author', 'Institution', 'Country', 'Term', 'Keyword', and 'Category' radio buttons.
- 聚类连线计算方法** (Clustering link calculation method): Points to the 'Link' section with options like 'Cited Reference', 'Cited Author', etc.
- 文献共引** (Literature co-citation): Points to the 'Cited Reference' radio button.
- 作者共引** (Author co-citation): Points to the 'Cited Author' radio button.
- 期刊共引** (Journal co-citation): Points to the 'Cited Journal' radio button.
- 阈值设置，调整聚类节点与研究等关系连线** (Threshold setting, adjusting clustering node and research relationship links): Points to the 'Select top' field and 'most cited or occurred items from each slice' text.
- 剪切连线** (Pruning links): Points to the 'Pruning' section with options like 'Pathfinder', 'Minimum Spanning Tree', 'Pruning sliced networks', and 'Pruning the merged network'.
- 可视图显示形式** (Viewable display form): Points to the 'Visualization' section with options like 'Cluster View - Static', 'Cluster View - Animated', 'Show Networks by Time Slices', and 'Show Merged Network'.
- 寻径 最小生成树** (Pathfinding Minimum Spanning Tree): Points to the 'Minimum Spanning Tree' checkbox.
- 修切片网 修剪合并网** (Trimming slice network Trimming merged network): Points to the 'Pruning sliced networks' and 'Pruning the merged network' checkboxes.

Citespace II 运行主界面

# 文献共被引聚类



- Citation History
- Bookmark the Node
- Annotate the Node
- Clear the Bookmark
- Clear the Annotation
- Open DOI
- Google Scholar
- PubMed
- ACM DL
- CiteSeer
- List Cluster Members
- List Citing Papers to the Cluster
- Draw Similarity Networks (LSA)
- Hide Node
- Hide Cluster
- Restore Hidden Nodes
- Add to the Exclusion List
- Add to the Alias List (Primary)
- Add to the Alias List (Secondary)

右键点击各节点，可显示DOI、被引频次年代分布、链入google scholar等

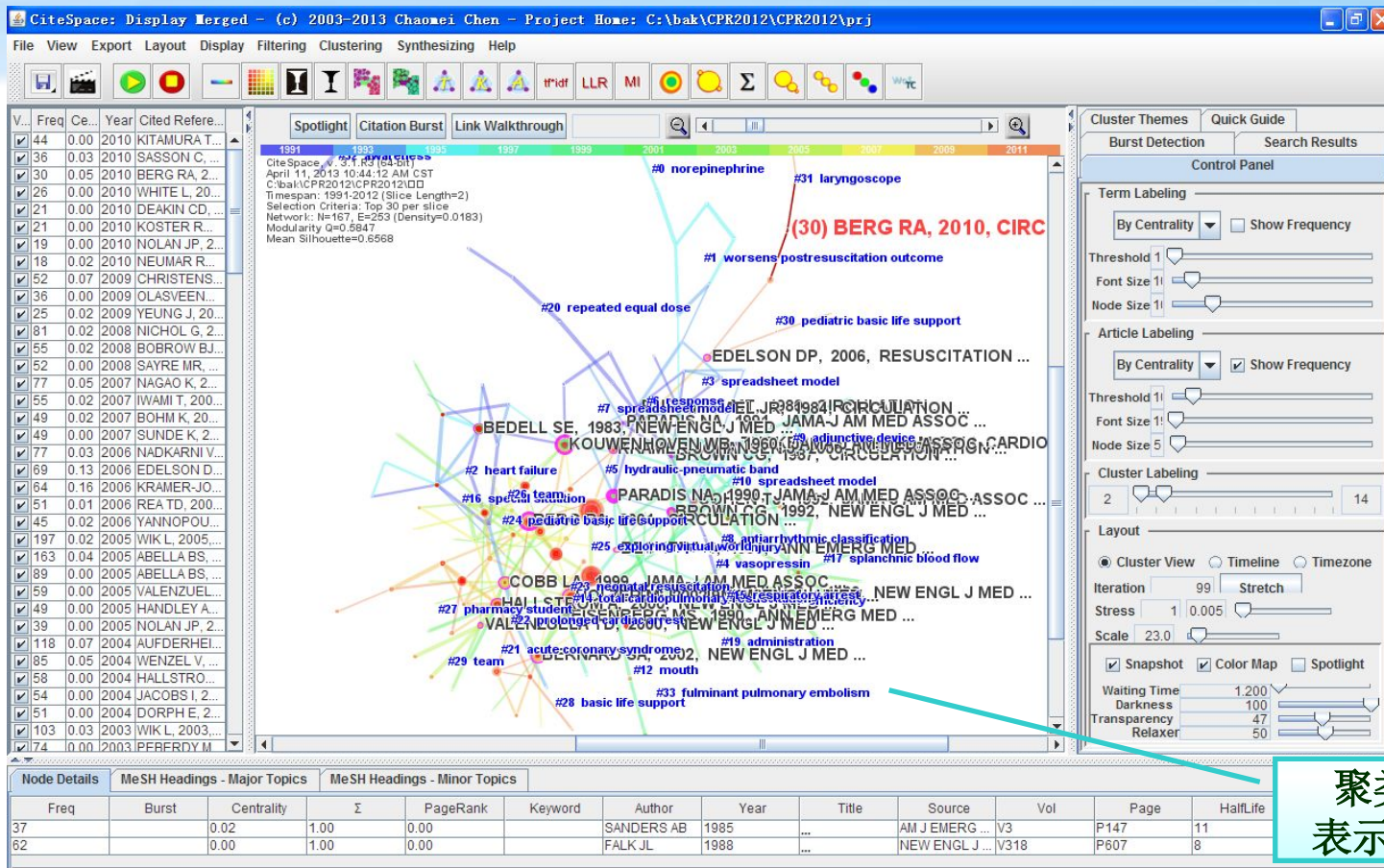
文献列表

显示被引频次、中心度、年份、被引文献

可视化窗口

控制面板等

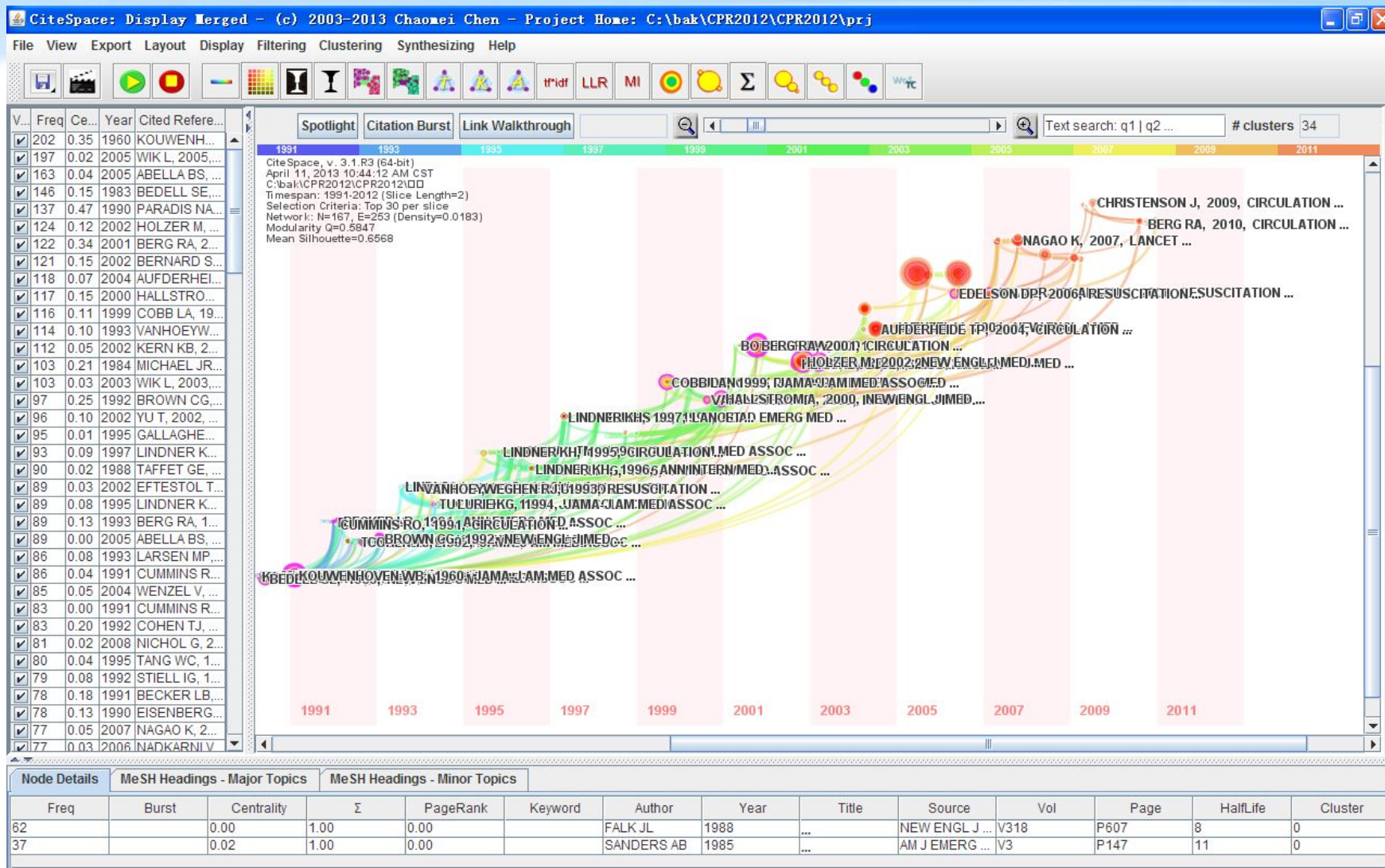
# 文献共被引聚类



聚类标题词  
表示研究热点

Citespace II用节点的彩色年轮表示法展现不同时间段的引证情况，节点和连线不同颜色，代表文献随时间变化的引用连接关系。节点根据被引用年份为节点外圈上色，如果具有显著的红色外圈，说明近几年引用频次高且集中，是被引激增（Citation burst）的文献。年轮外圈为紫色的，是引用网络中中介中心性最高的几个节点。聚类标签有助于查看文献的类团或在某一研究方向上找到相近相关的文献

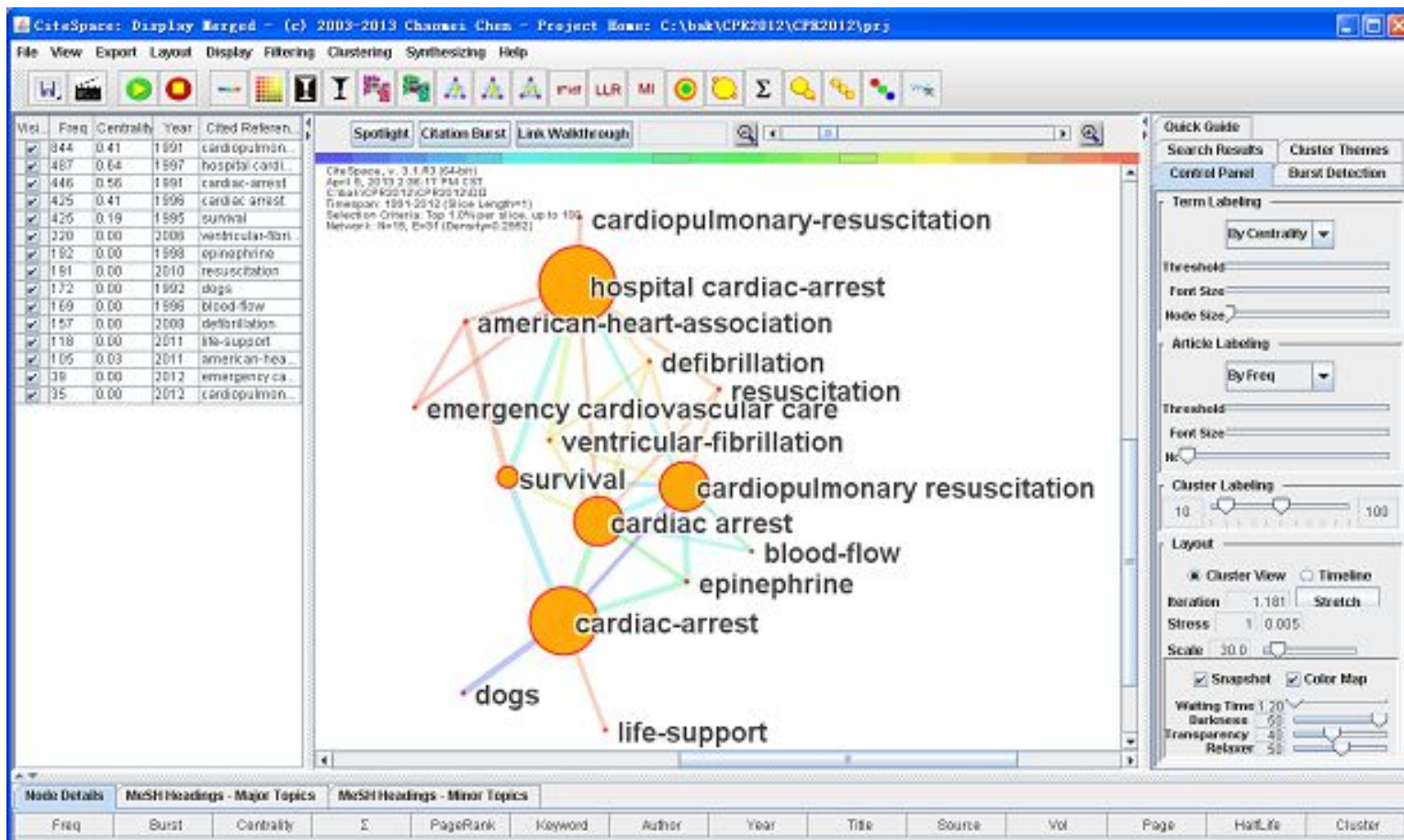
# 时区图“Timezone”



心肺复苏文献共被引时区视图

- 通过时区视图看研究热点的演变和趋势

# 高频词共现



心肺复苏文献高频词共现视图

## 表 心肺复苏文献高频关键词

高频词英文名称	高频词中文名称	出现频次	中心度	年度	涌现值
cardiopulmonary resuscitation	心肺复苏	844	0.41	1991	
hospital cardiac-arrest	院内心搏骤停	487	0.64	1997	
cardiac-arrest	心脏骤停	446	0.56	1991	12.1
cardiac arrest	心脏骤停	425	0.41	1996	
survival	生存	425	0.19	1995	
ventricular-fibrillation	室颤	220	0	2006	3.61
epinephrine	肾上腺素	192	0	1998	13.75
resuscitation	复苏	191	0	2010	
dogs	实验犬	172	0	1992	23.1
blood-flow	血流	169	0	1996	11.58
defibrillation	除颤	157	0	2008	8.5
life-support	生命支持	118	0	2011	3.6
american-heart-association	美国心脏协会	105	0.03	2011	10.91
emergency cardiovascular care	心血管病急救	39	0	2012	19.28
cardiopulmonary-resuscitation	心肺复苏	35	0	2012	

# 突发词 (Burst term) 检测

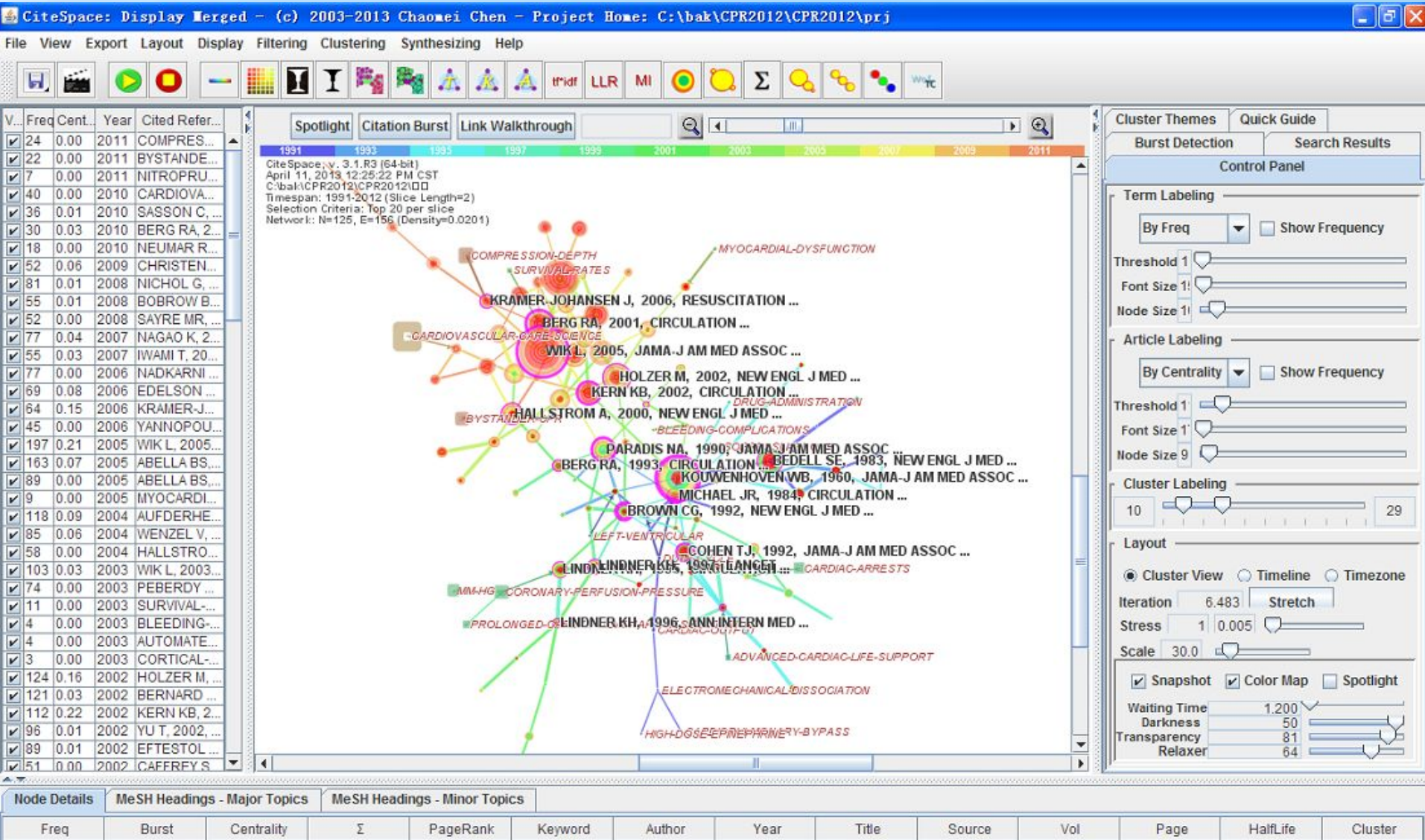


图 心肺复苏文献共被引及突发词视图

## 2011年以后出现的突发词

突发词英文名称	突发词中文名称	突发词英文名称	突发词中文名称
<b>airway management</b>	气道管理	<b>chest compression</b>	胸部按压
<b>nitroprusside enhanced cardiopulmonary resuscitation</b>	硝普钠增强心肺复苏	<b>compression depth</b>	按压深度
<b>patient outcome</b>	患者预后	<b>compression only cpr</b>	仅按压的心肺复苏术
<b>simulated cardiopulmonary resuscitation</b>	心肺复苏模拟	<b>coronary intervention</b>	冠脉介入
<b>simulated cpr</b>	心肺复苏模拟	<b>cpr performance</b>	心肺复苏效果
<b>bystander cpr</b>	旁观者心肺复苏	<b>european resuscitation council guidelines</b>	欧洲复苏指南
<b>cardiopulmonary resuscitation performance</b>	心肺复苏效果		

# 优势

## 用数据说话 有图有真相

- 用上述两种可视化软件来进行文献计量分析，能对某研究主题或领域，快速获取其研究历史特点与文献引证关系。
- 能够在同一个评价角度上对文献的重要度进行定量排序，得到的结果比较客观，量化过程无主观性因素。
- 可辅助发现学科前沿热点。
- 该方法可同样运用于其他各类研究主题的计量与分析。

# 局限性

- 文献分析不能替代文献阅读，选择以高被引频次、高频词作为依据来发现经典文献与研究热点，反映的只是总体情况描述，并非全面的定性结论。
- 文献的重要性并非以被引频次为惟一评价标准，引文动机的差异导致引文重要性不同，引文的规范程度与权重度无法逐条核实，所以生成结果提供的是参考信息，需要科学对待，可与专家评判等方法结合使用。

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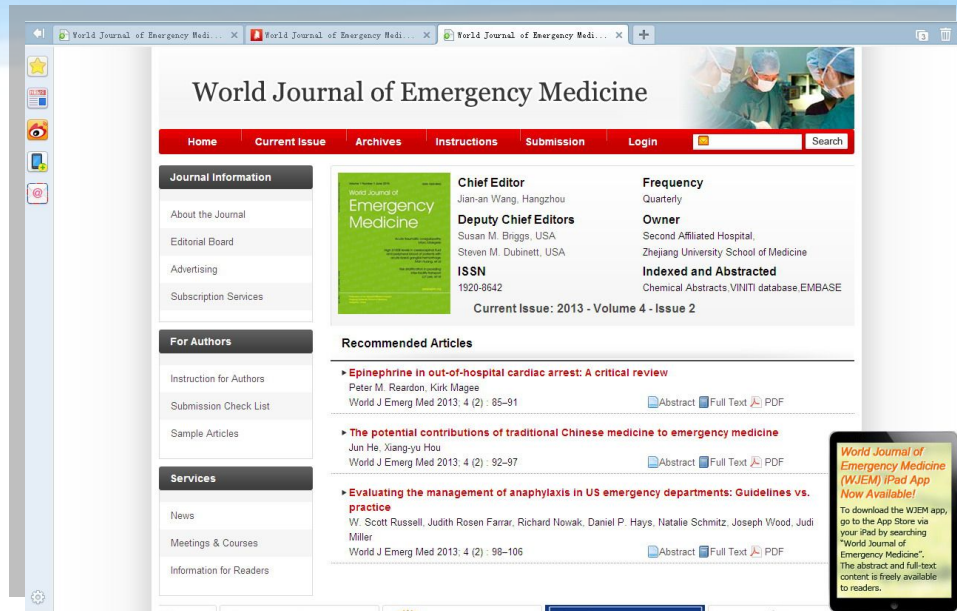


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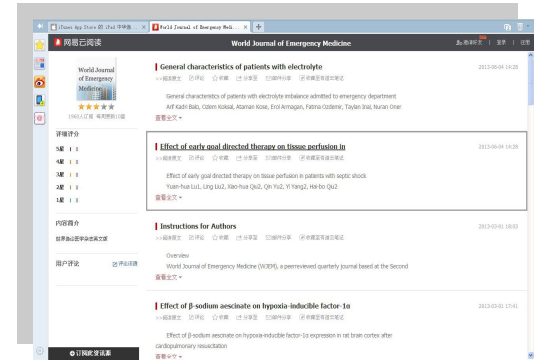


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