



Options for citation tracking: Google Scholar, Scopus and Web of Science

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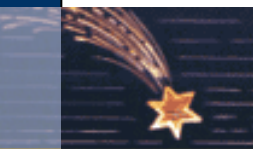
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Today's Talk

- ❖ Citation tracking
- ❖ Motivation
- ❖ Methodology
- ❖ What we found
- ❖ Refreshed data - 2006

Citation Tracking

- ❖ Trace scholarly work through time.
- ❖ Citation counts are used to measure the impact and influence of a work, author, or institution.
- ❖ Journal impact factors.

Motivation

- ❖ Scholarly Communication Transformed
 - ❖ Preprint/postprint servers
 - ❖ Institutional repositories
 - ❖ Open access journals

Motivation

- ❖ Search Transformed
 - ❖ Web of Science
 - ❖ Google Scholar
 - ❖ Scopus

Comparison

Scopus	Web of Science	Google Scholar
Subscription	Subscription	Free
15,000 journals (Science and SS) 1996 --	9,300 journals (Science, SS, Humanities) Science:1900 -- SS: 1956 -- Humanities:1975 --	Unknown, no journal selectivity. Unknown, but based on existence of fulltext online.
Citing refs. gathered from journals.	Citing refs. gathered from journals.	Citing refs. from jnls, web, archives...

Study Design

- ❖ Two subjects: oncology and condensed matter physics.
- ❖ Two years: 1993 and 2003.
- ❖ Wanted a set of journals of varying importance from those subjects and years—sampled 11.
- ❖ Sampled articles from those 22 journals.

Oncology Titles

❖	CA – A Cancer Journal for Clinicians	44.515
❖	Journal of the National Cancer Institute	13.856
❖	Advances in Cancer Research	6.200
❖	Neoplasia	4.377
❖	Cancer Immunology, Immunotherapy	3.52
❖	Breast Cancer Research	2.975
❖	BMC Cancer	2.290
❖	Cancer Investigation	1.935
❖	American Journal of Clinical Oncology	1.703
❖	Chemotherapy	1.248
❖	International Journal of Biological Markers	0.929

Condensed Matter Physics

❖	Surface Science Reports	21.350
❖	J Of The Mechanics & Physics Of Solids	3.443
❖	Physical Review B	3.075
❖	Semiconductor Science And Technology	2.152
❖	Interface Science	1.639
❖	European Physical Journal B	1.426
❖	J Of Physics And Chemistry Of Solids	0.988
❖	Physics Of The Solid State	0.724
❖	Phase Transitions	0.581
❖	Solid State Technology	0.431
❖	International Journal Of Modern Physics B	0.361

Create Four Sets of “Seed Articles”

- ❖ Gathered all articles published in 1993 and 2003 in the two groups of journals.
- ❖ Drew a random sample from each of the four sets.
- ❖ Sample was proportional to the number of articles in each journal.

"Three options for citation tracking: Google Scholar, Scopus and Web of Science, " Nisa Bakkalbasi, Kathleen Bauer, Janis Glover, and Lei Wang, BMC Biomedical Digital Libraries, 3:7 (2006).

Example from Set of Articles

ID	AU	TI	SO	PD	VL	IS	BP	WoS	Scopus	Gscholar
361	Boettc	Reduc	EURO	JUN	33	4	439	5	5	5
365	Maunu	Detern	EUROPEAN I		33	2	193	5	4	7
366	Wagbe	Study	EURO	OCT	35	3	371	2	2	0
367	Seibol	Charge	EURO	SEP	35	2	177	1	1	1
368	Schmic	Fluore	EURO	JAN	31	2	179	11	16	5
378	Divinsl	Tracer	INTER	JAN	11	1	67	10	12	4
379	Wang,	Wettin	INTER	APR	11	2	237	4	7	4
380	Benve	New e	JOURI	OCT	51	10	1773	4	4	2
381	Drugar	Two e	JOURI	SEP	51	9	1745	2	2	3
382	Dao, M	Mecha	JOURI	NOV-D	51	12-Nov	2259	9	9	13

Example Citation Counts for One Article

Title	WOS # citing references	Scopus # citing references	GS # citing references
Diamond diodes and transistors	8	6	3

Results

Based on data collected in November 2005

	Oncology			CM Physics		
	WOS	Scopus	GS	WOS	Scopus	GS
1993	45.3	35.4	20.8	22.5	NA	10.3
2003	8.3	8.9	6.2	3.9	2.2	2.2

Based on data collected in October 2006

	Oncology			CM Physics		
	WOS	Scopus	GS	WOS	Scopus	GS
2003	12.0	13.1	10.7	6.1	6.6	4.56

Deeper Examination of 2003 Seed Articles

- ❖ Chose a subset of seed articles from **2003 only**.
- ❖ Collected the actual citing references for 50 articles from all journal titles in both oncology and condensed matter physics.

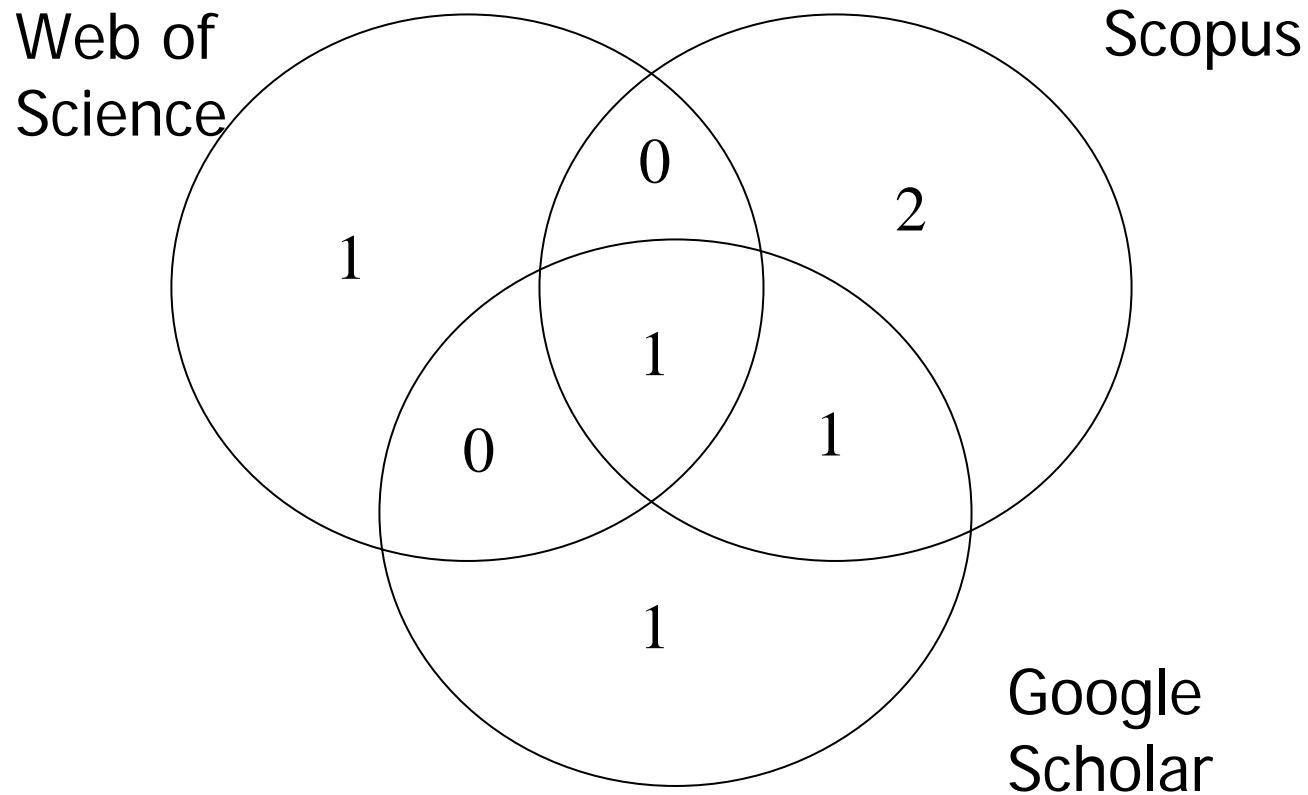
Example: One Seed Article

- ❖ D'Allesandro DM, Dosa NP:
Empowering children and families with
information technology. Archives of
Pediatrics & Adolescent Medicine, 155
(10): 1131-1136 Oct. 2001

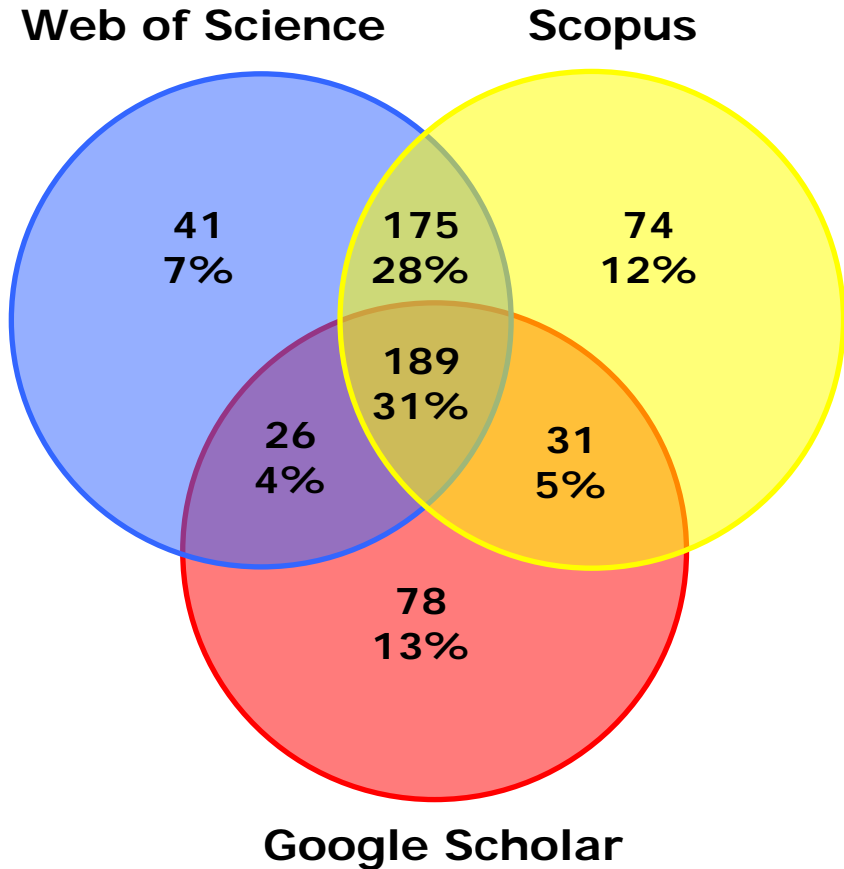
Citing References for D'Allesandro

WOS	Scopus	GS
Selwyn: Reconsidering political and popular understandings of the digital divide	Kouri: Online discussions mirroring family life during pregnancy	Selwyn: Reconsidering political and popular understandings of the digital divide
Jones: Effectiveness of off-line and web-based promotion of health information web sites	Ridley: Towards evaluating health information portals: A Tasmanian E-health case study	Shiffman: Information Technology for Children's Health and Health Care
	Selwyn: Reconsidering political and popular understandings of the digital divide	Edison: Information Technology: Its Importance to Child Safety
	Shiffman: Information Technology for Children's Health and Health Care	

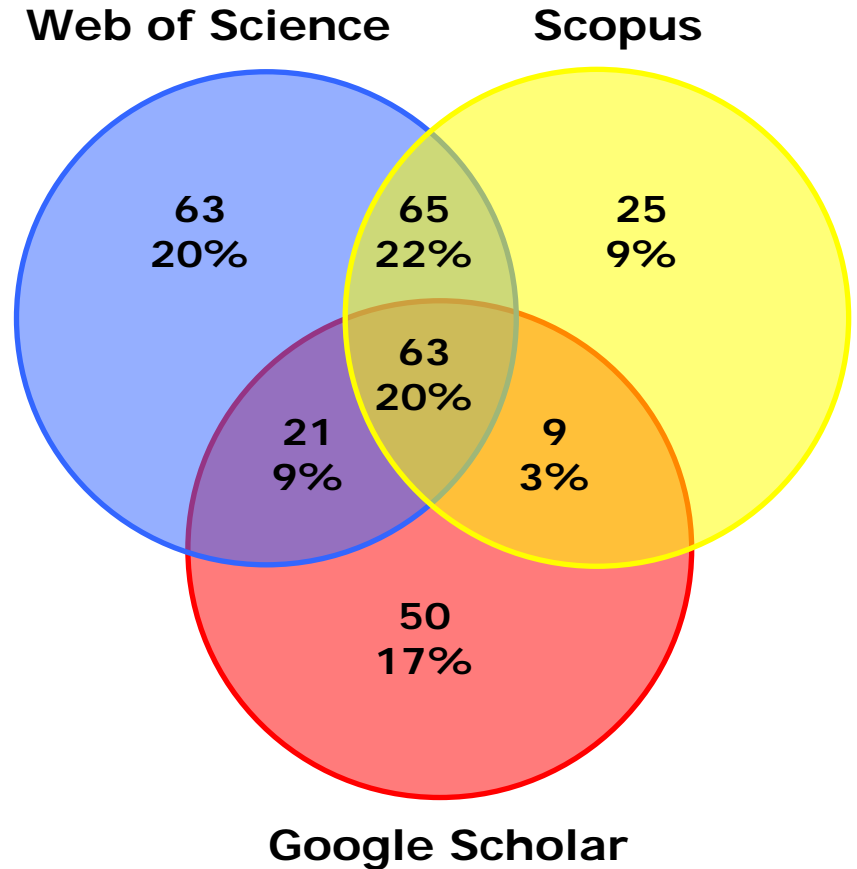
Citing References for D'Allesandro



Oncology (total=614)

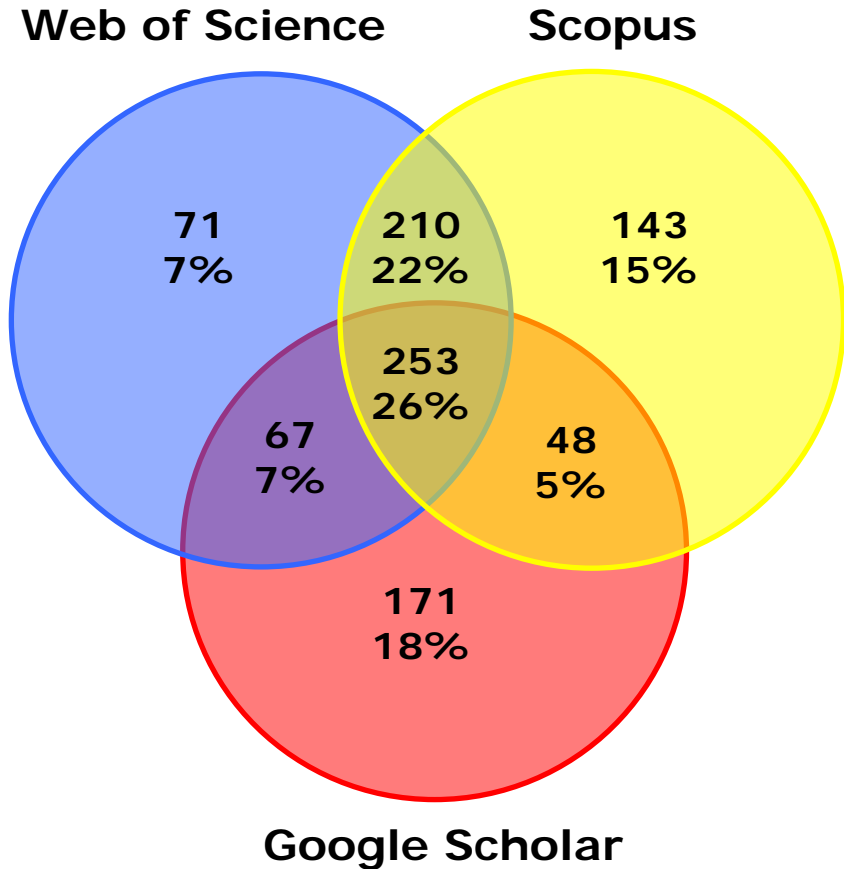


CM Physics (total=296)

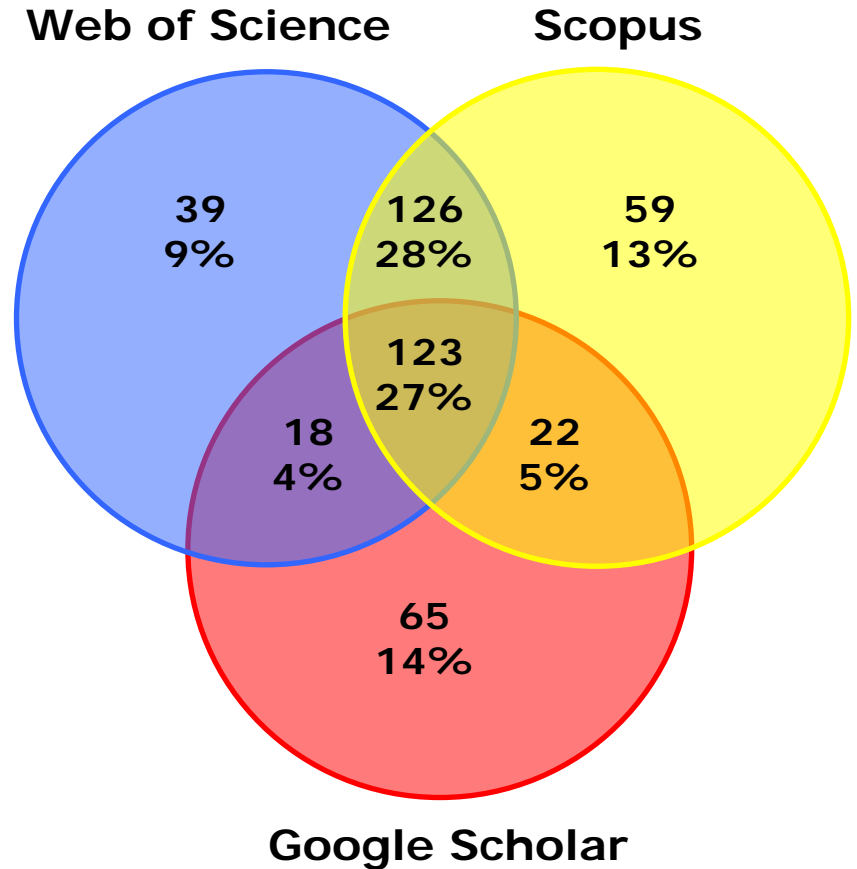


Based on data collected in November 2005

Oncology (total=963)



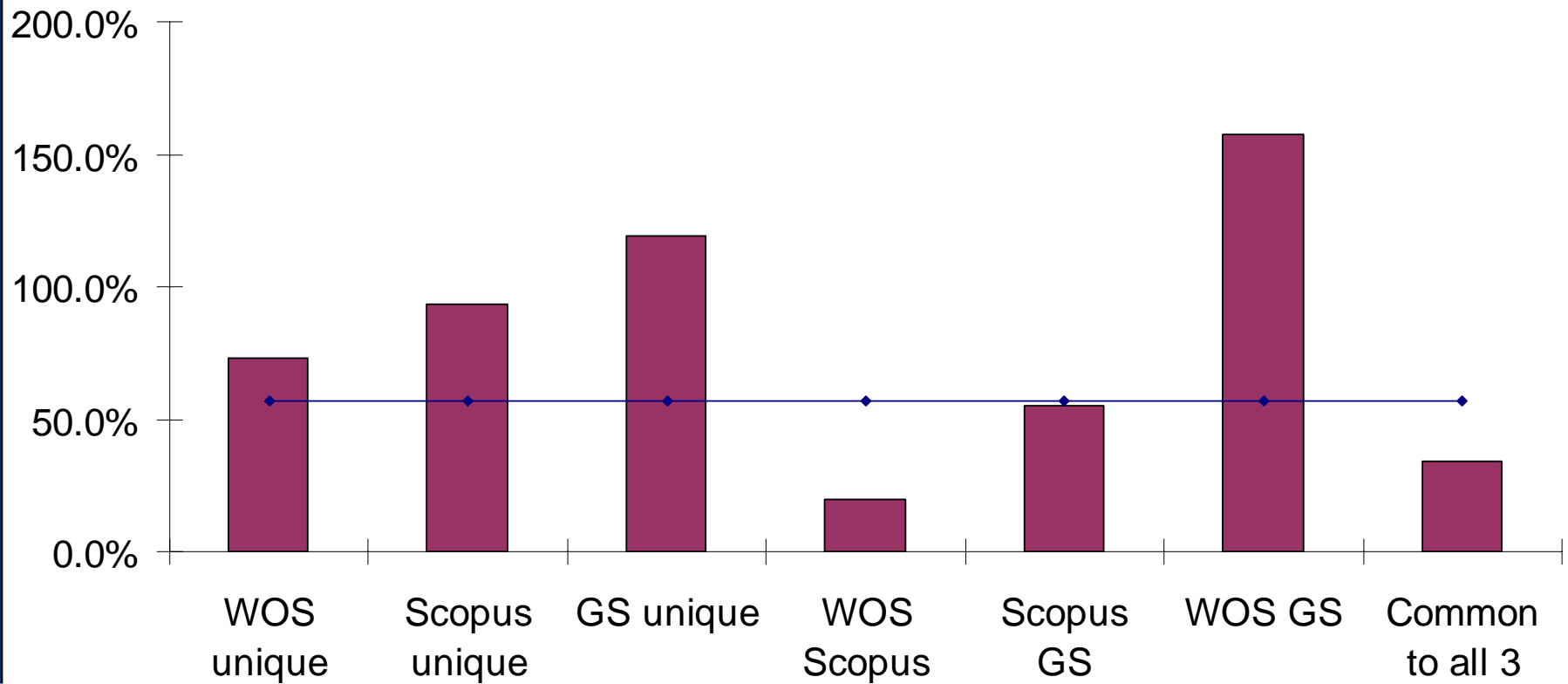
CM Physics (total=452)



Based on data collected in October 2006

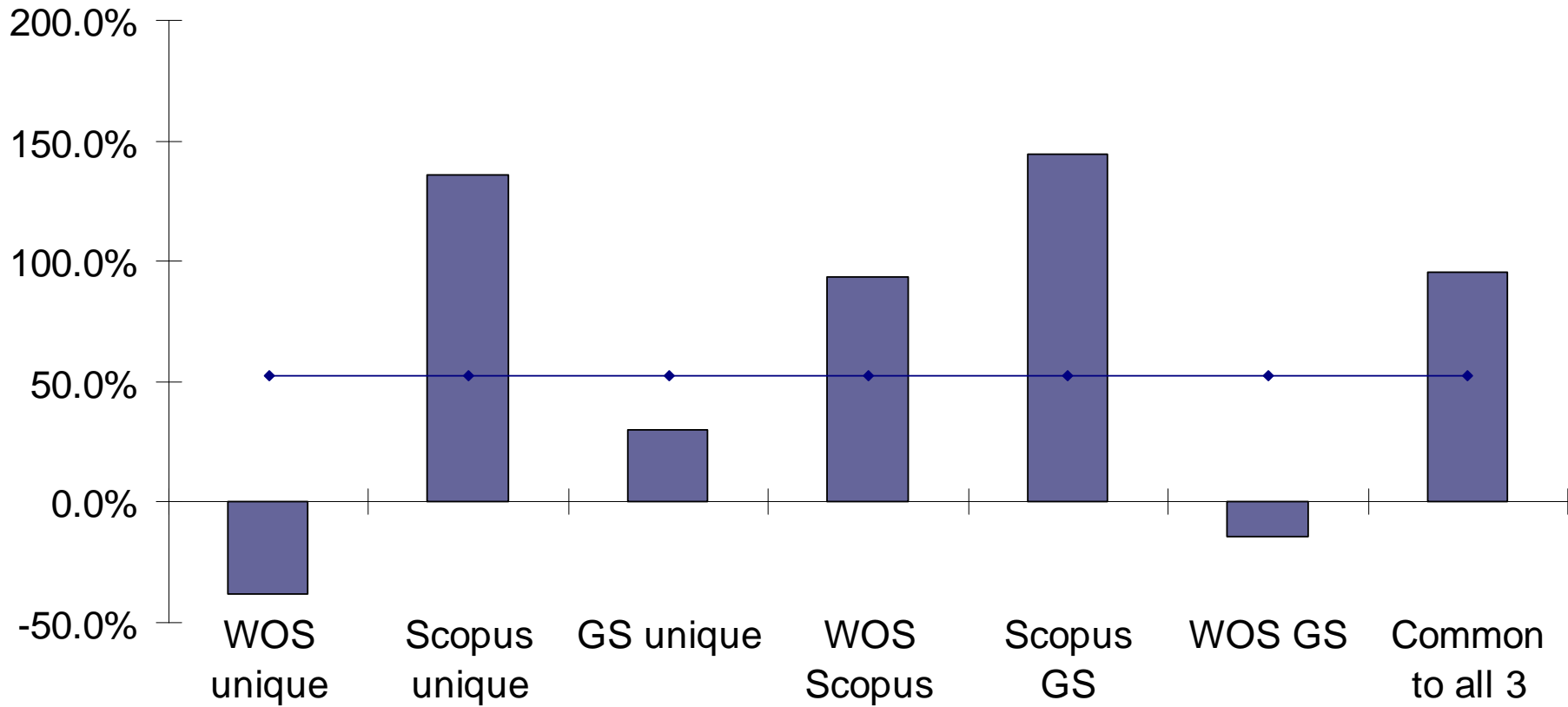
Relative Change 2005 to 2006

Oncology



Relative Change 2005 to 2006

CM Physics



Conclusion

- ❖ Scopus has shown significant improvement and is the better tool for recent material in these subjects.
- ❖ No single resource finds everything.
- ❖ Google Scholar should be consulted in addition to Scopus or Web of Science.