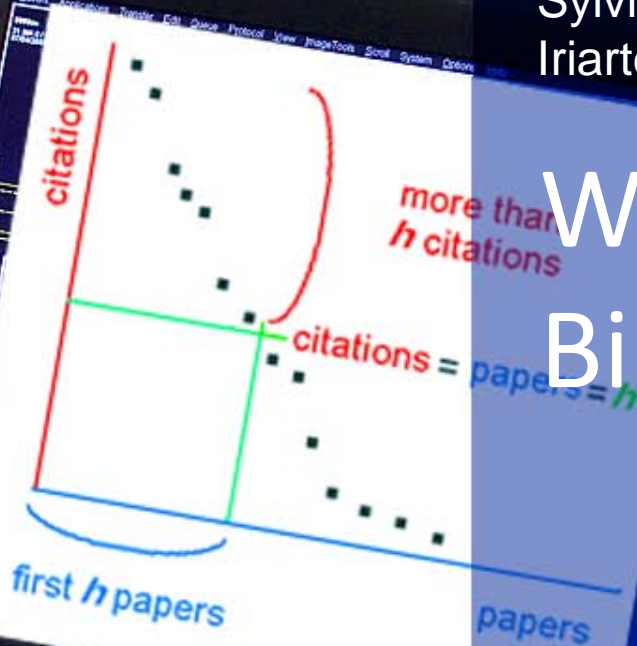


Sylvie Godel, Isabelle de Kaenel, Pablo Iriarte

Web Services for Bibliometrics



Unil

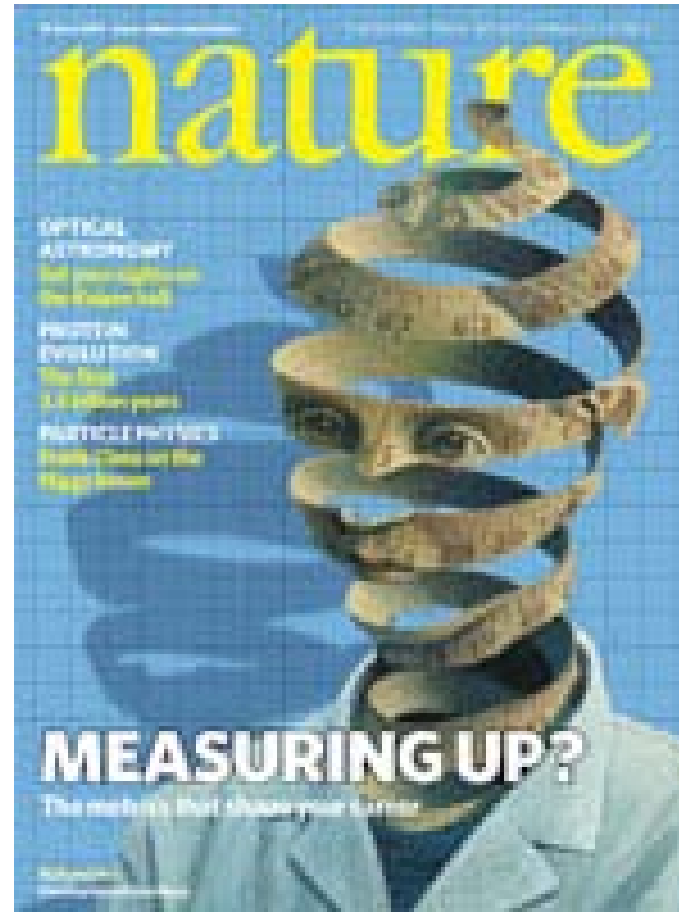
UNIL | Université de Lausanne
Faculté de biologie et de médecine



Plan

- Definitions
- Experiences in Lausanne
- The Institutional repository (IR) main role
- Citation-enhanced databases
- From IR to Bibliometric analysis
- Conclusion

Bibliometrics at the Nature front page of this week!



Bibliometrics is the analysis of information pertaining to a journal's publications and the citations that link them, which can be aggregated at the level of authors, institutes, countries, journals, and subjects.

Web services are applications that can be accessed via Hypertext Transfer Protocol and delivers information in a machine readable form like XML

The web service experience

- In Lausanne, the web services are used to fill-in entry forms with identifiers
 - ILL orders web form
 - SERVAL Institutional repository

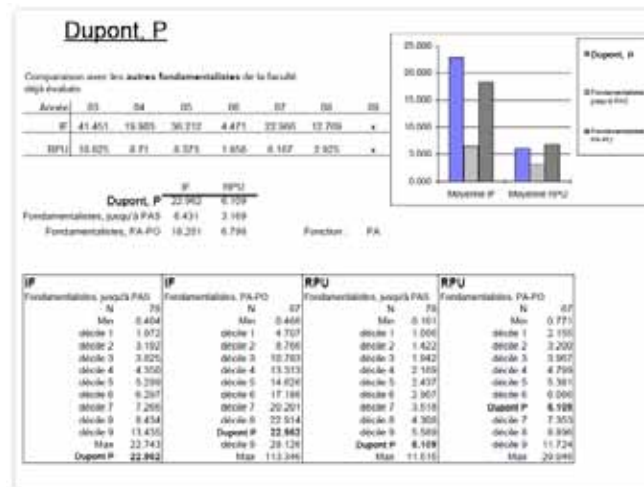
The image shows a web form titled "Remplir la commande à partir du" (Fill in the order from the). The form is used for entering document information. A dropdown menu is open, showing options for document type: "Article", "Pubmed/pmid", "DOI", "Pubmed/pmid", "Rero/roid", "Rero/isbn", and "Web of Science/wosid". The form fields include:

- Type de document : Article
- Titre du périodique ou du livre * :
- Année * : Vol. * : (No) : Suppl. : Pages * :
- Titre de l'article ou du chapitre :
- Auteur(s) :
- Edition: (pour les livres) : ISSN / ISBN : UID :
- Remarques :

Buttons for "Enregistrer" (Save) and "Effacer" (Clear) are at the bottom. A "remplir" button is also visible in the top right of the dropdown menu area.

The bibliometrics experience

- Assistance to the faculty research evaluation unit
- Assessment of research activity at the author level with Impact Factors (IF)



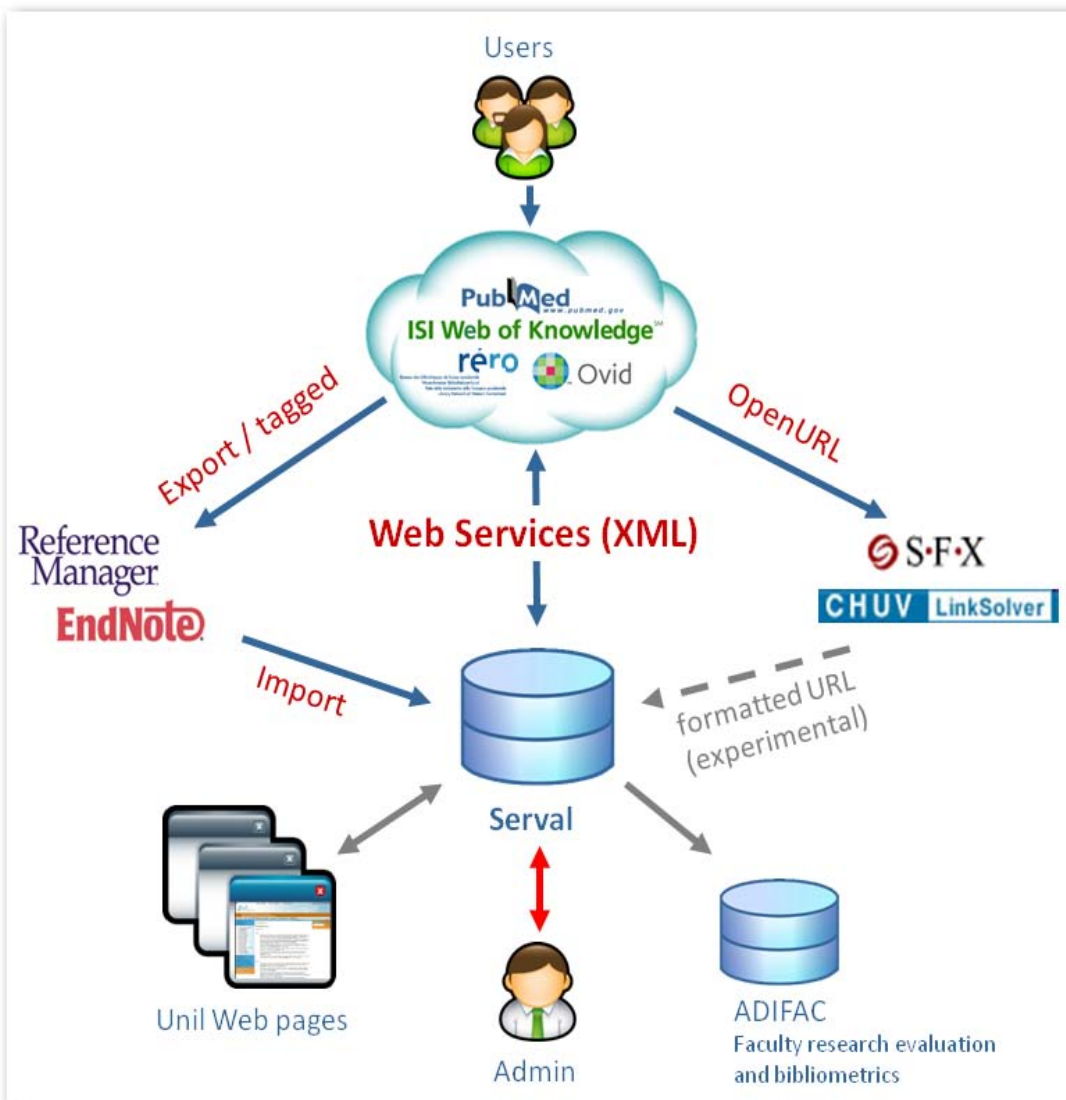
The institutional repository (IR) main role

– Pivot

- One single database
- Author's / units publication lists on the Web
- Metadata re-used by administrative tool (ADIFAC)

– Quality Control

- Authoritative metadata imported from trusted sources (PubMed, WoS, CrossRef, etc.)
- Data transfers through bibliographic management software
- Introduce unique Identifiers (PMID, DOI, UT, etc.)
- Avoids homonyms and duplicates



The metadata acquisition techniques tested in SERVAL

Citation-enhanced databases

	Size	Citations coverage	Web Service	Free version
Web of Science	46 M	1900 ->	Yes (SOAP / POST)	No
SCOPUS	40 M	1996 ->	Yes (JSON)	Yes (limited)
PubMed Central	2 M	2000 ->	Yes (OAI)	Yes

From IR to bibliometric analysis

- Web services can be used to
 - Enrich the author's publication list
 - Produce bibliometric analysis on the fly

serval
serveur académique lausannois

+



ISI Web of
KNOWLEDGE
Transforming Research

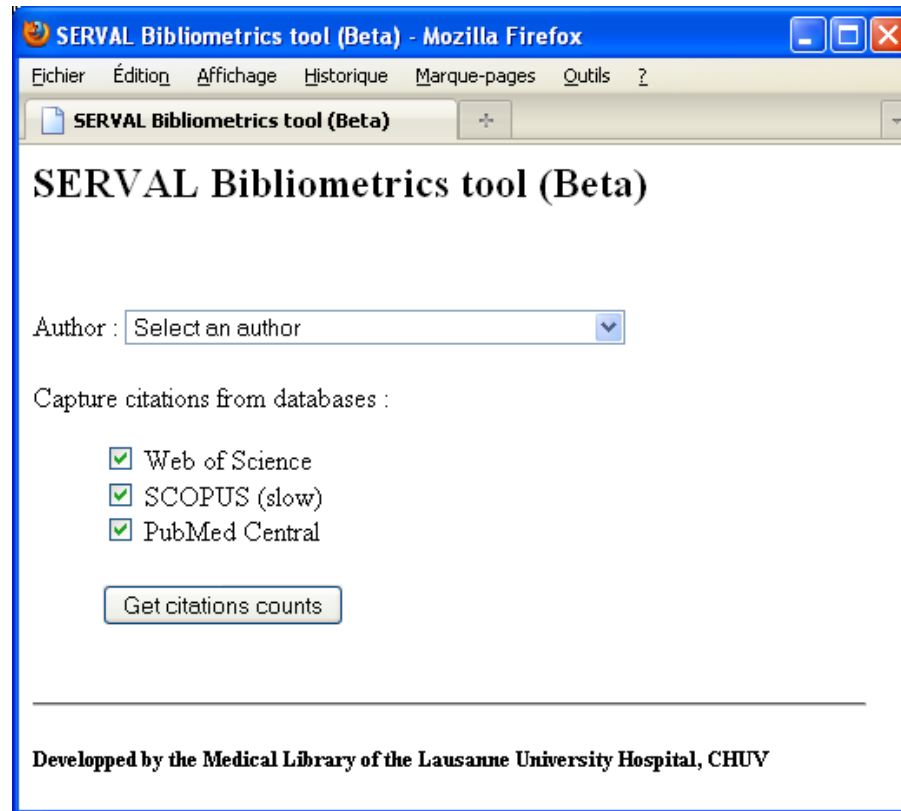
SCOPUS



=

The screenshot shows a web-based interface for bibliometric analysis. It includes a search bar, a list of publications, and a table with columns for various metrics. The table has multiple columns, including what appears to be author names, titles, and various numerical values representing bibliometric data.

Testing the prototype



The screenshot shows a web browser window titled "SERVAL Bibliometrics tool (Beta) - Mozilla Firefox". The browser's menu bar includes "Fichier", "Édition", "Affichage", "Historique", "Marque-pages", "Outils", and "?". The address bar shows the page title "SERVAL Bibliometrics tool (Beta)". The main content area displays the title "SERVAL Bibliometrics tool (Beta)" in a large, bold font. Below the title, there is a form with the following elements:

- An "Author:" label followed by a dropdown menu containing the text "Select an author".
- A label "Capture citations from databases:" followed by three checked checkboxes:
 - Web of Science
 - SCOPUS (slow)
 - PubMed Central
- A button labeled "Get citations counts".

At the bottom of the page, a horizontal line separates the footer text: "Developed by the Medical Library of the Lausanne University Hospital, CHUV".

<http://www.bium.ch/bibliometrics/>

Behind the screen: WoS

<http://www2.unil.ch/openillink/openlinker/bibliometrics/ut.php?pmid=6091913>

Response :

```
<?xml version="1.0" encoding="UTF-8" ?>
<response xmlns="http://www.isinet.com/xrpc41" src="app.id=SERVAL_Web_Services,env.id=Bibliometrics,partner.email=pablo.iriarte@chuv.ch">
<fn name="LinksAMR.retrieve" rc="OK">
<map>
<map name="cite_id">
<map name="WOS">
<val name="relatedRecordsURL">
<![CDATA[http://gateway.isiknowledge.com/gateway/Gateway.cgi?GWVersion=2&SrcApp=PARTNER_APP&SrcAuth=LinksAMR&KeyUT=A1984TS61800024&
DestLinkType=RelatedRecords&DestApp=ALL_WOS&UsrCustomerID=2109fe80815e8621515050a12879ac1a]]></val>
<val name="sourceURL">
<![CDATA[http://gateway.isiknowledge.com/gateway/Gateway.cgi?GWVersion=2&SrcApp=PARTNER_APP&SrcAuth=LinksAMR&KeyUT=A1984TS61800024&
DestLinkType=FullRecord&DestApp=ALL_WOS&UsrCustomerID=2109fe80815e8621515050a12879ac1a]]></val>
<val name="timesCited">897</val>
<val name="ut">A1984TS61800024</val>
<val
name="citingArticlesURL"><![CDATA[http://gateway.isiknowledge.com/gateway/Gateway.cgi?GWVersion=2&SrcApp=PARTNER_APP&SrcAuth=LinksAMR&K
eyUT=A1984TS61800024&DestLinkType=CitingArticles&DestApp=ALL_WOS&UsrCustomerID=2109fe80815e8621515050a12879ac1a]]></val>
</map>
</map>
</map>
</fn>
</response>
```

Behind the screen: SCOPUS

<http://www2.unil.ch/openillink/openlinker/bibliometrics/scopus.php?req=PMID%286091913%29&citid=1>

Request:

```
http://www.scopus.com/scsearchapi/search.url?devId=[the developer ID]&search=PMID%286091913%29&callback=t
```

Response:

```
t({"PartOK":{"TotalResults":"1","ReturnedResults":"1","Position":"0","Results":[
  {"title":"Organization of the higher-order chromatin loop: Specific DNA attachment sites on nuclear scaffold",
    "firstauth":"Mirkovitch, J.",
    "citedbycount":"391",
    "pubdate":"1984",
    "sourcetype":"Cell",
    "inwardurl":"http://www.scopus.com/inward/record.url?eid=2-s2.0-0021675784&partnerID=65&md5=4b9314f61428df989c6b434005a7dc36"}
]})
```

Behind the screen: PMC

http://eutils.ncbi.nlm.nih.gov/entrez/eutils/elink.fcgi?db=pubmed&cmd=neighbor&linkname=pubmed_pmc_refs&id=6091913

Request:

```
http://eutils.ncbi.nlm.nih.gov/entrez/eutils/elink.fcgi?db=pubmed&cmd=neighbor&linkname=pubmed_pmc_refs&id=6091913
```

Response:

```
<?xml version="1.0"?>
<!DOCTYPE eLinkResult PUBLIC "-//NLM//DTD eLinkResult, 10 August 2009//EN" "http://www.ncbi.nlm.nih.gov/entrez/query/DTD/eLink_090910.dtd">
<eLinkResult>
  <LinkSet>
    <DbFrom>pubmed</DbFrom>
    <IdList>
      <Id>6091913</Id>
    </IdList>
    <LinkSetDb>
      <DbTo>pmc</DbTo>
      <LinkName>pubmed_pmc_refs</LinkName>
      <Link>
        <Id>2774341</Id>
      </Link>
      <Link>
        <Id>2683591</Id>
      </Link>
      [...]
    </LinkSetDb>
  </LinkSet>
</eLinkResult>
```

Match and mix

- Web services used to match
 - the IR records with the citedness scores
 - using unique identifiers to query the sources
 - parsing XML/JSON responses to extract citations counts
- Table display of the mixed results

Coordonnées		Enseignements		Publications		Bibliométrie	
Number of publications in SERVAL: 31							
Metrics	Web of Science®	SCOPUS®	PubMed Central	Max.			
Publications retrieved	24 of 31 (77.42%)	28 of 31 (90.32%)	25 of 31 (80.65%)	29 of 31 (93.55%)			
Sum of the Times Cited	2103	912	510	2124			
Average Citations per Item	87.63	32.57	20.40	73.24			
Number of never cited publications	0 of 24 (0.00%)	0 of 28 (0.00%)	5 of 25 (20.00%)	0 of 29 (0.00%)			
h-index	16	13	10	16			
g-index	45	30	22	46			
g/h ratio	2.81	2.31	2.20	2.88			

Details :						Cited by			Average citations per year				
Ref.	SERVAL ID	Year	DOI	PMID	UT	Was	Scopus	PMC	Max.	WoS	Scopus	PMC	Max.
1	BIB_CC4FC604183	1984		6091913	A1984T561800024	897	991	225	897	33.22	14.48	8.33	33.22
2	BIB_FA0C288516RC	1991		1901265	A1991FF95000023	296		70	296	14.80		3.50	14.80
3	BIB_F40R20204181	1988		3132558	A1988M424800010	125	58	33	125	5.43	2.52	1.43	5.43
4	BIB_3C16F94535C1	1988		3132557	A1988M424800009	122	54	25	122	5.30	2.35	1.09	5.30
5	BIB_BB24B8484DC5	1989		2726767	A1989U340700041	96	24	25	96	4.36	1.09	1.14	4.36
6	BIB_FT4E14052B12	1994		7523862	A1994PM68400026	81	81	24	81	4.76	4.76	1.41	4.76
7	BIB_55255A09885C	1993		8375375	A1993LW53400001	80	61	10	80	4.44	3.39	0.56	4.44
8	BIB_8AD0CC74260F	1986		3098982	A1986D342500010	63	20	15	63	2.52	0.80	0.60	2.52
9	BIB_3FC72A7C888A	1992		1729551	A1992GW05300001	59	35	22	59	3.11	1.64	1.16	3.11
10	BIB_27C6980FEC77	1987		2894689	A1987L347900012	57	23	10	57	2.38	0.96	0.42	2.38

Conclusion

- The IR metadata can be enriched with citation information using Web Services
- Citation information moves and is not easy to integrate in the faculty assessment process
- The best of all possible worlds: comparison of citations for each record
 - ➔ **The highest score is selected**
- Web services allows the calculation of a « **mixed data h index** »

Muito obrigado
Merci!
Gracias
Thank you!