Advanced Searching

- Steps before searching
- Topic search (Web of Science, Scopus, NEBIS)
- Refine & evaluate your results
«Some search in order to find; and some find in order to end the effort of searching.»

(Elazar Benyouëtz)
Example: Sustainable energy in Switzerland

→ effective literature search
Before searching – analyse your topic

• **How extensive should your search be?**
  Do you need everything about your topic or simply the documents providing an overview?
  *Tip: combine your search terms with «overview», «introduction», «survey», «review», ...*

• **Which material do you need?**
  Books, PhD theses, articles, ....
  → different document types often require diverse search tools.

• **Which time period should be covered?**
  Since when could there be publications on the topic?
  Which period is covered by the search tools?
Before searching – analyse your topic

- **Orientation / definition of the terms**
  - Reference works (encyclopaedias, dictionaries, etc.)
  - Manuals
  - Wikipedia
  - Maybe some key papers/books you already have

- **Comprehensive searches with current issues**
  - Articles, conference proceedings, reports
  - Books
  - Standards, guidelines and patents (depending on the research topic; advanced level)

- **Historical searches**
  - Bibliographies
  - Card index
  - Archives
Before searching – analyse your topic

Analysis of the central terms of the topic → core concepts

How to find the search terms:
• Find synonyms, beware of homonyms
• Define super- and subordinate terms
• Check related terms
• Translate the search terms (if necessary)
Tip: Use online-dictionaries (LEO etc.) as well as other relevant reference works
• Spelling BE and AE

Note:
• Previous or other spellings
• Meaningful concepts
• Write out abbreviations
• Include singular and plural forms by means of truncation

→ Bring the search terms in a meaningful order, using a table.
Word list for «Sustainable energy in Switzerland»

<table>
<thead>
<tr>
<th>Sustainable</th>
<th>Energy</th>
<th>Switzerland</th>
</tr>
</thead>
<tbody>
<tr>
<td>sustainability</td>
<td>energy resources</td>
<td></td>
</tr>
<tr>
<td>renewal</td>
<td>energy sources</td>
<td></td>
</tr>
<tr>
<td>regeneration</td>
<td>energy supply</td>
<td></td>
</tr>
<tr>
<td></td>
<td>power (plant)</td>
<td></td>
</tr>
<tr>
<td>sustainable, renewable, regenerative</td>
<td></td>
<td>Switzerland</td>
</tr>
<tr>
<td>solar, hydropower, wind</td>
<td>Swiss</td>
<td></td>
</tr>
<tr>
<td>biomass, wood, coal</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Truncation, placeholder and wildcards

Electronic search tools generally seek character strings, not meanings.
→ Problematic if there are various spellings (e.g. color, colour)
→ Grammatical endings aren’t taken into account

Placeholder and wildcards facilitate the search:

?  Replaces exactly one sign
→ author search: Ma?er, finds Maier and Mayer

*  can represent zero or more trailing, leading or enclosed characters
→ econom* finds: economy, economist, economic, economically

Note: Too much truncation might lead to wrong hits.
Note: Check, which symbols you can use in which database.
Phrase search

Search for documents with words in an exact sequence (phrase)

→ **Phrase search:** in “quotation marks”

**Example:** Scopus search for energy transition: 237,142 hits

Gets results on the topic of energy transition but also finds documents where both energy AND transition occur anywhere but aren’t necessarily related:

"energy transition“ 2,902 hits, exact sequence

**Tip:** Also works with Web of Science, NEBIS, Google and many more
Truncated word list for «Sustainable energy in Switzerland»

<table>
<thead>
<tr>
<th>Sustainable</th>
<th>Energy</th>
<th>Switzerland</th>
</tr>
</thead>
<tbody>
<tr>
<td>sustainab*</td>
<td>energ*</td>
<td>Switzerland</td>
</tr>
<tr>
<td>renew*</td>
<td>power</td>
<td>Swiss</td>
</tr>
<tr>
<td>regenerat*</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Exercise - Advanced Searching (Part a)

Fossil fuelled ships in the marine environment

<table>
<thead>
<tr>
<th>Term 1</th>
<th>Term 2</th>
<th>Term 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>“marine environment”</td>
<td>“fossil fuel*”</td>
<td>ship*</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
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<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Complete the table accordingly (see sheet Exercise - Adv. Searching a)
Boolean operators (logical operators from set theory)

**OR** any one of the search terms must occur to be retrieved. Hits contain at least one of the terms.
→ Number of results increases

**AND** all search terms must occur to be retrieved. Hits contain both search terms.
→ Number of results decreases

**NOT** excludes records that contain a given search term after the NOT-operator.
→ Number of results decreases
Boolean operators

(sustainab* OR renew* OR regenerat*)
AND
(energ* OR power)
AND
(Swiss OR Switzerland)
Search in Web of Science
apps.webofknowledge.com
Search in Web of Science

Results: 3,893,897
(from Web of Science Core Collection)

Results: 77,538
(from Web of Science Core Collection)

Search History: Web of Science™ Core Collection

- Set 1: 618,933
  - TOPIC: (sustainab* OR renew* OR regenerat*)
  - Save History / Create Alert
  - Open Saved History

- Set 2: 3,893,897
  - TOPIC: (energ* OR power)

- Set 3: 77,538
  - TOPIC: (switzerland OR swiss)
  - Combine Sets
  - Delete Sets
Search in Web of Science

Sort order of the hits: e.g. year, number of citations

To filter the hits (left menu bar): e.g. year, subject, document type etc.
Alerts - keep you up to date

- Creating search alerts
- Creating citation alerts
Search in Scopus: (sustainab* OR renew* OR regenerat*) AND (energ* OR power) AND (Switzerland OR Swiss)

www.scopus.com
Search in Scopus

Limit to the Keyword “Switzerland”
Advanced search

Enter query string:

TITLE-ABS-KEY(...)
AND (TITLE(Swiss OR Switzerland)
OR KEY(Swiss OR Switzerland))

... more flexible with Scopus’ Advanced Search

310 document results
... even more so using Scopus’ “AND NOT” operator

```
(TITLE-ABS-KEY(sustainab* OR renew* OR regenerat*)) AND (TITLE-ABS-KEY(energ* OR power)) AND (TITLE-ABS-KEY(Swiss OR Switzerland)) AND NOT (ABS(*© PRE/10 switzerland))
```
Search in Scopus

To sort the hits: eg date, cited by, relevance

To filter the hits: limit to eg year, author, subject, keywords
# Web of Science vs Scopus

<table>
<thead>
<tr>
<th></th>
<th>Web of Science</th>
<th>Scopus</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Subject areas</strong></td>
<td>multidisciplinary</td>
<td>multidisciplinary</td>
</tr>
<tr>
<td><strong>Contents – Journals</strong></td>
<td>&gt;18,000 journals (via WoS Core Collection)</td>
<td>&gt; 23,700 journals (&gt; 4,000 gold open access); better coverage of recent journals</td>
</tr>
<tr>
<td></td>
<td>(&gt; 5,000 via Emerging Sources Citation Index)</td>
<td></td>
</tr>
<tr>
<td><strong>Contents – Books</strong></td>
<td>&gt; 80,000 books (via WoS Core Collection)</td>
<td>&gt; 166,000 non-serial books, &gt; 600 book series</td>
</tr>
<tr>
<td><strong>Contents – Conferences</strong></td>
<td>&gt; 7.4 Mio records (via WoS Core Collection)</td>
<td>&gt; 8.3 Mio records</td>
</tr>
<tr>
<td><strong>Contents – Patents</strong></td>
<td>&gt; 32 Mio records (via Derwent Innovations Index)</td>
<td>&gt; 39 Mio records from 5 patent offices</td>
</tr>
<tr>
<td><strong>Volume of data</strong></td>
<td>&gt; 90 Mio records (WoS Core Collection)</td>
<td>&gt; 71 Mio records</td>
</tr>
<tr>
<td><strong>Cited References</strong></td>
<td>from 1900</td>
<td>from 1970 (ongoing project)</td>
</tr>
<tr>
<td><strong>Updates</strong></td>
<td>weekly</td>
<td>daily</td>
</tr>
<tr>
<td><strong>Period covered</strong></td>
<td>from 1900</td>
<td>from 1788</td>
</tr>
<tr>
<td><strong>Coverage</strong></td>
<td>global, with Anglo-American focus</td>
<td>global, with European focus</td>
</tr>
<tr>
<td><strong>Identification of authors and institutions</strong></td>
<td>ResearcherID (authors must register)</td>
<td>author ID (assigned automatically), affiliation identifier</td>
</tr>
<tr>
<td><strong>Functions</strong></td>
<td>alert service</td>
<td>alert service</td>
</tr>
<tr>
<td></td>
<td>related records (based on shared references)</td>
<td>related records (based on either shared references, authors or keywords)</td>
</tr>
<tr>
<td><strong>Literature management</strong></td>
<td>EndNote, BibTeX, others</td>
<td>Mendeley, BibTeX, RIS (Endnote)</td>
</tr>
<tr>
<td><strong>Special features</strong></td>
<td>Optional (licensed) access to: Research evaluation tools &quot;Journal Citation Reports&quot; &amp; &quot;Essential Science Indicators&quot; and databases such as BIOSIS, Inspec, MEDLINE.</td>
<td>&quot;Articles-in-Press&quot; from more than 3,750 journals Medline data included. UTF-8 encoding, to display umlauts and special characters.</td>
</tr>
</tbody>
</table>
Search in NEBIS ([http://recherche.nebis.ch](http://recherche.nebis.ch))

```
sustainab* OR renew* OR regenerat*
AND All fields contains energ* OR power
AND All fields contains Switzerland OR Swiss
```

**Search for:** Books, Journals, Images...

**Search Scope:** All NEBIS libraries
Search in NEBIS

Filter, e.g. by type, availability, library, language

sort, e.g. by date, relevance, title
Search in English – results in French?

<table>
<thead>
<tr>
<th>Title</th>
<th>Valorisation intensive des énergies renouvelables dans l'agglomération franco-valdo-genevoise: une perspective de &quot;société à 2'000W&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Author</td>
<td>Jérôme Faessler</td>
</tr>
<tr>
<td>Serie</td>
<td>: Terre &amp; environnement ; Vol. 103</td>
</tr>
<tr>
<td>Place, Publisher</td>
<td>Genève : Université de Genève</td>
</tr>
<tr>
<td>Creation Date</td>
<td>2011</td>
</tr>
<tr>
<td>Format</td>
<td>274 S. : Ill. + 1 CD-ROM</td>
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<tr>
<td>Language</td>
<td>French</td>
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<tr>
<td>Description</td>
<td>Thèse Université de Genève, Genève 2011</td>
</tr>
<tr>
<td>Identifier</td>
<td>ISBN: 978-2-940472-03-1</td>
</tr>
<tr>
<td>Creator</td>
<td>Jérôme Faessler</td>
</tr>
</tbody>
</table>

**Subjects**

- ALTERNATIVE ENERGIES + REGENERATIVE ENERGIES (ENERGY TECHNOLOGY): 620.92g
- RENEWABLE RESOURCES: 330,09.031.3ng
- INDUSTRIAL DEVELOPMENT + INDUSTRIAL SITES (PHYSICAL PLANNING): 711.164*1
- RELOCATION + RESETTLEMENT + DECENTRALIZATION (PHYSICAL PLANNING): 711.165
- CANTON OF GENEVA (SWITZERLAND): (494.42) eng
- WESTERN SWITZERLAND + FRENCH-SPEAKING SWITZERLAND: (494.4) eng
- CD-ROM (DOCUMENT TYPES): (06*2)
Search in Lib4RI’s E-Book Catalogue (www.lib4ri.ch/e-book-catalogue.html)

<table>
<thead>
<tr>
<th>Search ID#</th>
<th>Search Terms</th>
<th>Search Options</th>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>S4</td>
<td>((S1 AND S2 AND S3)) AND (PT ebook OR PT book)</td>
<td>Limiters - Available in Library Collection</td>
<td>View Results (70)</td>
</tr>
<tr>
<td>S3</td>
<td>(Switzerland OR Swiss) AND (PT ebook OR PT book)</td>
<td>Expanders - Apply equivalent subjects</td>
<td>View Details</td>
</tr>
<tr>
<td>S2</td>
<td>(energy OR power) AND (PT ebook OR PT book)</td>
<td>Search modes - Find all my search terms</td>
<td>Revise Search</td>
</tr>
<tr>
<td>S1</td>
<td>(sustainable OR renew OR (regenerate OR (regenerate)) AND (PT ebook OR PT book)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Refine Results**

**Current Search**

- Find all my search terms: ((S1 AND S2 AND S3)) AND (PT ebook OR PT book)
- Expanders - Apply equivalent subjects
- Limiters - Available in Library Collection

**Search Results: 1 - 10 of 70**

1. **6.4.7.5 Pollegio (Switzerland) - Under Construction**
   - Subjects: electrical power engineering; electrical power engineering - power generation and transmission; sustainable energy development; sustainable energy development - alternative renewable energy sources technologies
   - eBook: Get it from Lib4RI

2. **22.3.3 Basel, Switzerland**
   - Subjects: electrical power engineering; electrical power engineering - power generation and transmission; sustainable energy development; sustainable energy development - alternative renewable energy sources technologies
   - eBook: Get it from Lib4RI

**Page Options**

- Relevance
- Date Newest
- Date Oldest
Evaluation of the results

Too few results

- Search for possible sources of error (Typing errors, wildcards, …)
- View the relevant hits → restart the search with other synonyms
- Widen the subject
- Verify the search instruments

Too many results

- Narrow the search by: number of citations, publication year, reviews
- Narrow the subject
- Exclude non relevant hits (NOT, Filter)
- Verify the search instruments
Introduction to Lib4RI Resources and Services

... in your documentation

and more on the web: www.lib4ri.ch > Services > Lib4RI-Info
Thanks for your interest, stay curious!

…and continue with Exercise - Advanced Searching (Part b)