



Coffee Lecture

# Bibliometrics and Altmetrics

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# Why trust a publication?

## Reasons to Trust

Know the author, the journal, or the university

Peer-reviewed: Editor sends manuscripts to knowledgeable peers

## Number of Citations (Citation Impact)

Number of citations (in the reference sections of other publications)

Flaws:

- Reviews get more citations than research articles
- Depends on scientific field
- Articles may only get cited because they are controversial
- Self-citations, citation circles
- Depends on the bibliometric database

# Bibliometric Databases for Scientific Publications

**Bibliometric databases/platforms collect metadata of publications, such as title, authors, journal name and the cited references (from the reference list).**

	Google Scholar	Microsoft Academic	Scopus	Dimensions	Web of Science
<b>Coverage*</b>	88 %	60 %	57 %	54 %	52 %
<b>Access</b>	Open Access	Open Access	ETH VPI, or at ETH	Open Access	ETH VPI, or at ETH
<b>Features</b>				Contains Altmetrics	Journal Impact Factor

See also web site ETH-Bibliothek, "Databases, standards, patents", <https://library.ethz.ch/en/locations-and-media/media-types/databases-standards-patents.html>

\* Coverage of a sample (derived from citations). See Martín-Martín, Alberto, et al. "Google Scholar, Microsoft Academic, Scopus, Dimensions, Web of Science, and OpenCitations' COCI: a multidisciplinary comparison of coverage via citations." *Scientometrics* (2020): 1-36.

# How to Determine the Citation Impact

## Authors

Google Scholar: Publications of [Prof. Lino Guzzella](#) have been cited in 15600 publications.

## Publications

Google Scholar: His book [«Vehicle Propulsion Systems», 2007](#), was cited by 1940 publications.

## Journals

Journal Impact Factor = Number of citations per article and year (average over two years after publication)

Defined by Web of Science

## Universities and Countries

www.lens.org is OA

Scopus used for University Rankings

# Altmetrics

- Alternative metrics
  - Measurement of impact
  - Complementary to traditional, citation-based metrics
  - Collected from societal and scientific tools
  - Examples:
    - Citations on Wikipedia
    - Discussions on research blogs
    - Bookmarks on reference managers like Mendeley, CiteULike, ...
    - Mentions on social networks (twitter, Facebook, ...)
    - Number of downloads, views, reads of publication

# Altmetrics: *Tools*

- None-academic Tools  
Facebook, Twitter, Youtube, Slideshare, ...
- Academic Tools  
CiteULike, Mendeley, Academia.edu, ...
- Harvesting Tools:  
Altmetric, Impactstory, PlumX, ...

# Altmetrics: *Advantages*

- **Fast:**
  - collect data about a publication as soon as it is published
- **Real time:**
  - Collect data once an action happened
- **Unlimited audience**
  - Not restricted to academic audience



# Altmetrics: *Disadvantages*

- Reliability of impact measurement (academic view)
  - Still young area of research
  - Measure dissemination rather than relevance
- Manipulation
  - Likes on facebook, retweets, downlads, ...
- Danger of misleading data interpretation
  - Download ≠ reading
  - (re)tweet ≠ read, understand, use the publication
  - Add to a reference manager ≠ citing



Thanks for your attention!

Next Coffee Lecture:

Sustainable scientific scrapbooking with Typora

03. March 2021, Webinar via Zoom  
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