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Lauréline Grandjean
and
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23.02.2021

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Learning Objectives

- Build an information retrieval strategy
- Get familiar with some of the EPFL Library information resources
- Evaluate and use information
- Distinguish document types: take the quiz
- Break – 15 min
- Avoid plagiarism by citing correctly : take the quiz

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Information retrieval strategy

- Define the topic in the form of a question
- Pull out the main concepts, keywords
- Think of synonyms and related concepts
- Write a search equation
- Use multiple resources

Information retrieval strategy

- Define the topic in the form of a question

  Develop a methodology to automatically estimate the snowmelt parameters of the hydrological model

How to automatically calculate snowmelt parameters?

Pull out the main concepts, keywords

  snowmelt / automatic* / parameter*/ calcul**

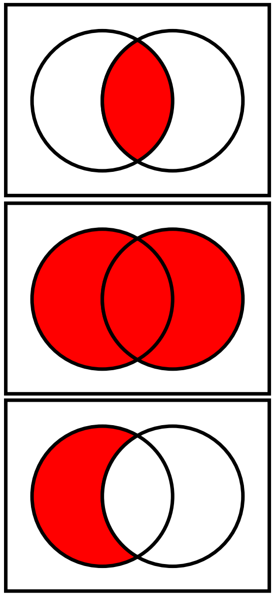
- Think of synonyms and related concepts
- Write a search equation
- Use multiple resources

Boolean operators and more

AND to combine key concepts

OR to add key concepts

NOT to exclude concepts



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Information retrieval strategy

- Pull out the main concepts, keywords

  snowmelt / automatic* / parameter*/ calcul**

- Think of synonyms and related concepts

  meltwater / « hydrolog model* » / model /*

  measure/ estim* / automatic* / « automatic method* »*

- Write a search equation

  (*snow-melt* AND automatic* AND calcul*) OR (« hydrolog* model* » AND measure*)*

- Use multiple resources

Choosing information resources

Use scientific ressources

- Encyclopaedies
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Is the information reliable, valid, objective and accurate?

✓ Is the information up-to-date?

✓ Who is the author?

Take the quiz

Kind of documents

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THÈSE N° 3711 (2007)

PRÉSENTÉE LE 17 JANVIER 2007

À LA FACULTÉ DE L'ENVIRONNEMENT NATUREL, ARCHITECTURAL ET CONSTRUIT
Laboratoire de constructions hydrauliques
SECTION DE GÉNIE CIVIL

ÉCOLE POLYTECHNIQUE FÉDÉRALE DE LAUSANNE

POUR L'OBTENTION DU GRADE DE DOCTEUR ÈS SCIENCES

PAR

Frédéric JORDAN

ingénieur civil diplômé EPF
de nationalité suisse et originaire de Genève (GE)

acceptée sur proposition du jury:

Prof. M. Hirt, président du jury
Prof. A. Schleiss, directeur de thèse
Dr D. Bérod, rapporteur
Prof. D. Gutknecht, rapporteur
Prof. A. Mermoud, rapporteur

ÉCOLE POLYTECHNIQUE FÉDÉRALE DE LAUSANNE

Lausanne, EPFL
2007

1

What kind of document is it?

A standard	0%	0 votes
✓ A thesis	100%	6 votes
A conference proceeding	0%	0 votes

ALPINE LAKES

Reginald W. Herschy
Hydrology Consultant, Reading, UK

Definition

Thomas (1969) divides the central European Alpine lakes into the following groups:

1. Bavarian lakes situated on the Swabian-Bavarian plateau at about 500 m.a.s.l in calcareous-rich catchments; lakes in the Salzkammergut
2. Carinthian lakes, situated in mountains in the south of Austria; sample (1976) has listed 1,270 lakes above surface areas of 0.01 km^2
3. Southern Alps (Italy and Switzerland mainly receiving water from crystalline regions of the Alps)
4. Lakes of the higher Alps usually of low salt content with a few being meromictic.

Dokulil (2005) has listed a selection of 60 Alpine lakes from the above groups in Table 1 and Figure 1.

Alpine Lakes, Table 1 Morphometric characteristics of 60 Alpine lakes: Z_{max} maximum depth, Z_{mean} mean depth, t_w theoretical retention time (Compiled from several sources)

Country/area	Lake name	Altitude (m.a.s.l)	Catchment area (km^2)	Lake area (km^2)	Volume ($\times 10^6 m^3$)	Z_{max} (m)	Z_{mean} (m)	t_w (year)
Austria	1 Erlaufsee	835	10	0.58	12.4	38	21.2	1.5
	2 Lunzer Untersee	608	27	0.68	13	33.7	20	0.3
Salzkammergut	3 Grundlsee	709	125	4.14	170	63.8	32.2	0.92
	4 Altauseersee	712	54.5	2.1	72	52.8	34.6	0.58
	5 Halstättersee	508	646.5	8.58	557	125.2	64.9	0.5
	6 Wolfgangsee	538	123	13.15	619	114	47.1	3.6
	7 Traunsee	422	1,417	25.6	2,303	191	89.7	1.0
	8 Krottensee	579		0.09	2.2	46.8	26	
	9 Fuschlsee	663	29.5	2.66	99.5	67.3	37.4	2.6
	10 Irrsee (Zellersee)	533	27.5	3.47	53	32	15.3	1.7
	11 Mondsee	481	247	14.21	510	68.3	36	1.7
	12 Attersee	469.2	463.5	45.6	3944.6	170.6	84.2	7.0
	13 Wallersee	505	110	6.39	71	24	9.4	2.0
	14 Obertrumersee	550	45.9	4.8	86	35	14.1	1.3
	15 Niedertumersee	500	12.5	3.25	48	40	14.8	3.1
	16 Grabensee	498	64.8	1.26	9	13	7.2	0.12
Carinthian Lake district	17 Millstättersee	588	276	13.28	1176.6	141	89	7
	18 Ossiachersee	501	154.8	10.79	215.1	52	19.9	2
	19 Wörthersee	439	164	19.38	816.3	85.2	42.1	9.5
	20 Weissensee	930	50	6.53	238.1	99	36	11
	21 Längsee	548		0.76	9	21	11.1	
	22 Klopeinersee	446	4.4	1.11	24.9	46	22.6	11.5
	23 Faaker See	554	35.6	2.2	32.7	29.5	14.9	1.2
Central Alps and Tyrol	24 Zeller See	749.5	54.7	4.55	178.2	68.4	39.2	4.1
	25 Achensee	929	218.1	6.8	481	133	66.8	1.6
	26 Piburgersee	913	2.65	0.13	1.8	24.6	13.7	2.7
	27 Vdr Finstertalersee	2,237		0.16	2.3	28.3	14.8	
	28 Gossenköllesee	2,413	0.3	0.016		9.9	4.7	
	29 Schwarzsee/Sölden	2,799	0.2	0.034		18	10	
Germany	30 Wagingersee		123.5	8.9	156.7	27	15.6	
	31 Königssee	603.3	137.6	5.3	511	189	93.1	2.3
	32 Chiemsee	518.2	1388.3	82.2	2053	73.4	25.6	1.4
	33 Tegernsee		210.5	9.1	324	72.2	36.6	
	34 Stamberger See	584.2	314.7	56.4	2,998	127.8	53.2	21
	35 Ammersee		988.5	47.6	1,775	82.5	37.8	2.5
	36 Bodensee	395	10,900	539	48,400	252	100	4.7
	37 Feldsee	1,109	1.5	0.9	1.4	32	15.7	0.5
Switzerland	38 Walensee	419	1061	24.2	2420	145	100	1.4
	39 Zürichsee (Ober S.)	408	1564.8	20.3	467	48	23	0.2
	40 Zürichsee (Unter S.)	406	1740.1	65.1	3,300	136	51	1.4
	41 Greifensee	436	160	8.5	150	32.6	17.7	1.5
	42 Vierwaldstättersee		1,831	87.8	12,280	214	156	1.8

3

What kind of article is the document above?

✓ Encyclopedia article	29%	2 votes
Journal article	0%	0 votes
Laboratory article	71%	5 votes

Journal of Hydrology 521 (2015) 482–497

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Characterization of snowmelt flux and groundwater storage in an alpine headwater basin

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SUMMARY

Snowmelt recharge of groundwater and its delayed release is considered an important mechanism for sustaining the baseflow of alpine streams, but relatively little is known about groundwater storage capacity in alpine regions. The goal of this study is to quantify the storage capacity and the timing of recharge and discharge in a partially glaciated, first-order watershed in the Canadian Rockies using detailed measurements of hydrological input and output fluxes. We computed daily input fluxes from direct measurements of snow accumulation at 1300 points within the watershed near the peak accumulation date, time-lapse photography during the melt season, and high-resolution (25 m) snowmelt simulation using a field-validated snowmelt energy balance model; and estimated the amount and timing of water storage within the watershed from the water balance. The peak storage amount was on the order of 60–100 mm averaged over the watershed, which was relatively small compared to the pre-melt snow water equivalent in the watershed (500–640 mm), but significant in comparison to the fall and winter baseflow (<0.5 mm d^{-1}) sustaining the aquatic ecosystem. This is an important finding demonstrating the critical role of groundwater storage and delayed release in alpine environments, which generally have little soil water storage.

1. Introduction

Mountainous regions are an important source of water for downstream regions. The hydrologic regime of mountains is dominated by seasonal and inter-annual storage of water in the snowpack and in glaciers, which is slowly released to rivers throughout the melt season (Viviroli et al., 2007). These processes are subject to changes resulting from climate variability (Barnett et al., 2005; Stewart et al., 2005), and these changes may affect the water supply of downstream communities (Finger et al., 2012), as well as the conditions of alpine stream habitats (Brown, 2006). Despite the importance of understanding alpine hydrological processes (Bales et al., 2006), field-based research has been limited due to difficulties with access and instrumentation in alpine environments and research is often focused on one aspect of the hydrologic cycle, such as glacier mass balance or snow accumulation and melt. Comprehensive field studies that address all components of the hydrologic cycle, including groundwater, are still relatively rare in alpine environments.

Recent studies have found that groundwater storage and flow in alpine regions may be more important than previously thought. Analysis of daily precipitation and discharge records in a Himalayan region showed that deep groundwater contributes as much as 20% to stream flow (Andermann et al., 2012). Studies in the Colorado Rocky Mountains in the USA have ascertained that subsurface flows contributed as much as 60% of water, even during early snowmelt times (Liu et al., 2004), with groundwater being important at a range of watershed scales (Frisbee et al., 2011). A study in the Sierra Nevada in the USA using chemical and isotopic tracers showed that the majority of flow in a mountain headwater stream was provided by shallow groundwater sources (Shaw et al., 2014). Understanding the storage and pathways of groundwater will help us understand how groundwater may or may not buffer the effects of climate variability on mountain rivers (Tague et al., 2008).

Conditions of alpine aquifers have not been well documented, and will likely vary from watershed to watershed. Factors that play a role in subsurface water storage include soil depth and distribution (Soulsby et al., 2006), sub-glacial and pro-glacial aquifers (Ward et al., 1999), and geological (Katsuyama et al., 2010) and

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Characterization of snowmelt flux and groundwater storage in an alpine headwater basin

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E-mail address: hayashi@ucalgary.ca (M. Hayashi).

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Espacenet

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UNDERWATER PROPELLING DEVICE FOR UNDERWATER VEHICLE

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Applicant(s):	ECOLE POLYTECHNIQUE FÉDÉRALE DE LAUSANNE (EPFL) [CH] + (Ecole Polytechnique Fédérale de Lausanne (EPFL))
Classification:	**- international:** *B63G8/08; B63G8/16; B63H23/32; F16C17/04; F16C17/14* **- cooperative:** B63G8/08; B63G8/16; B63H1/16; B63H23/326; F16C17/047; F16C17/14; B63G2008/002; B63H2001/165; F16C2326/30
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Also published as:	CN107207083 (A) US9227709 (B1) WO2016075631 (A1)

Abstract not available for EP3218259 (A1)
Abstract of corresponding document: US9227709 (B1)

The present invention relates to an underwater propelling device (10) i a stator (20) comprising circumferential arrayed coils (35) and being adapted to generate a controlled electromagnetic field along an axial direction, a shaftless propellant rotor (30) comprising: at least two magnetized ring-shaped plates, respectively an upper magnetized plate (31) and a lower magnetized plate (32), coaxially spaced-apart along said axial direction and perpendicular thereto such that said circumferential arrayed coils (35) are positioned therebetween, each plate (31, 32) defining a central aperture (31a, 32a) and having a circumferential array of radially extended magnetized poles (34) embedded therein, said magnetized poles (34) generating a magnetic field which interacts with the electromagnetic field of the stator (20) so as to cause the rotation of said plates (31, 32) about a central axis (ZZ') parallel to said axial direction, at least one ring-shaped propeller (33) defined by its outer periphery and its inner periphery, said propeller being received inside the central apertures (31a, 32a) of said plates (31, 32) and fixedly secured thereto, a plurality of propeller blades (35) projecting inward from the inner periphery of said propeller (33), said blades (35) producing a thrust along the central axis (ZZ') when the plates (31, 32) rotate, wherein the rotor (30) is axially separated from the stator (20) by a gap, preferably less than 3 mm, so as to permit the formation of a hydraulic film inside said gap, said hydraulic film being adapted to provide lubrication of the rotor, thus reducing friction between the rotor and the stator, and to transmit the axial thrust force of the rotor to the stator.

2

Is the above document a patent? Why?

Yes	100%	5 votes
No	0%	0 votes

CHAPTER 2

Return Period, Probability and Risk

In this chapter we show that the probability of occurrence of an event being greater than a given magnitude should never be the sole criterion on which to base a decision to execute a project or upgrade an existing project, and should never be the sole criterion for designing a structure. Once we have exposed this issue, we look at the concept of *risk* in relatively summary fashion, but with enough detail to understand the fundamental aspects of this very important idea, which is complementary to the concept of probability. We will also clarify as precisely as possible some of the terms and concepts connected to the notion of risk, because many of these related words are often poorly understood, or interpreted differently in various references. This is also why, for reasons of clarity, we use the term *probability of failure* in the second half of this chapter, and keep the term *risk* for later on when we have defined it more precisely in Section 2.3.

But before we get to this concept of risk and its related context, it is helpful to define the concept of *return period*, as we have mentioned in the previous chapter. We also explore how return period is computed using probabilities.

2.1 RETURN PERIOD

The concept of return period is well known in the hydrological community. Hydrologists are also frequently misunderstood by other scientists simply because they fail to clearly explain that return period is not related to calendar time but is a probabilistic concept. This confusion is also induced by the fact that the term *period of occurrence* is sometimes used. We are emphasizing this aspect so that, at least, hydrologists do not make this same error themselves!

5

What kind of document is it? Please write your answer in the empty space

Geophysical Research Abstracts
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EGU General Assembly 2015

Tapping hidden hydropower potential in Swiss Alpine catchments in the context of the planned nuclear power phase out

Ana Clara Santos (1,2), Bettina Schaefli (1,2), Pedro Manso (2), Anton Schleiss (2), Maria Manuela Portela (3), Andrea Rinaldo (1,4)

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In its Energy Strategy 2050, Switzerland is revising its energy perspectives with a strong focus on renewable sources of energy and in particular hydropower. In this context, the Swiss Government funded a number of competence centers for energy research (SCCERs), including one on the Supply of Energy (SCCER-SoE), which develops fundamental research and innovative solutions in geoenergies and hydropower .
Hydropower is already the major energy source in Switzerland, corresponding to approximately 55% of the total national electricity production (which was 69 TWh in 2014). The Energy Strategy 2050 foresees at least a net increase by 1.53 TWh/year in average hydrological conditions, in a context were almost all major river systems are already exploited and a straightforward application of recent environmental laws will impact (reduce) current hydropower production.
In this contribution, we present the roadmap of the SCCER-SoE and an overview of our strategy to unravel currently non-exploited hydropower potential, in particular in river systems that are already used for hydropower production. The aim is hereby to quantify non-exploited natural flows, unnecessary water spills or storage volume deficits, whilst considering non-conventional approaches to water resources valuation and management.
Such a better understanding of the current potential is paramount to justify future scenarios of adaptation of the existing hydropower infrastructure combining the increase of storage capacity with new connections between existing reservoirs, heightening or strengthening existing dams, increasing the operational volume of natural lakes (including new glacier lakes), or by building new dams. Tapping hidden potential shall also require operational changes to benefit from new flow patterns emerging under an evolving climate and in particular in the context of the ongoing glacier retreat. The paper shall present a broad view over the mentioned issues and first conclusions of ongoing research at the country scale.

6

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Geophysica[illegible] Abstracts
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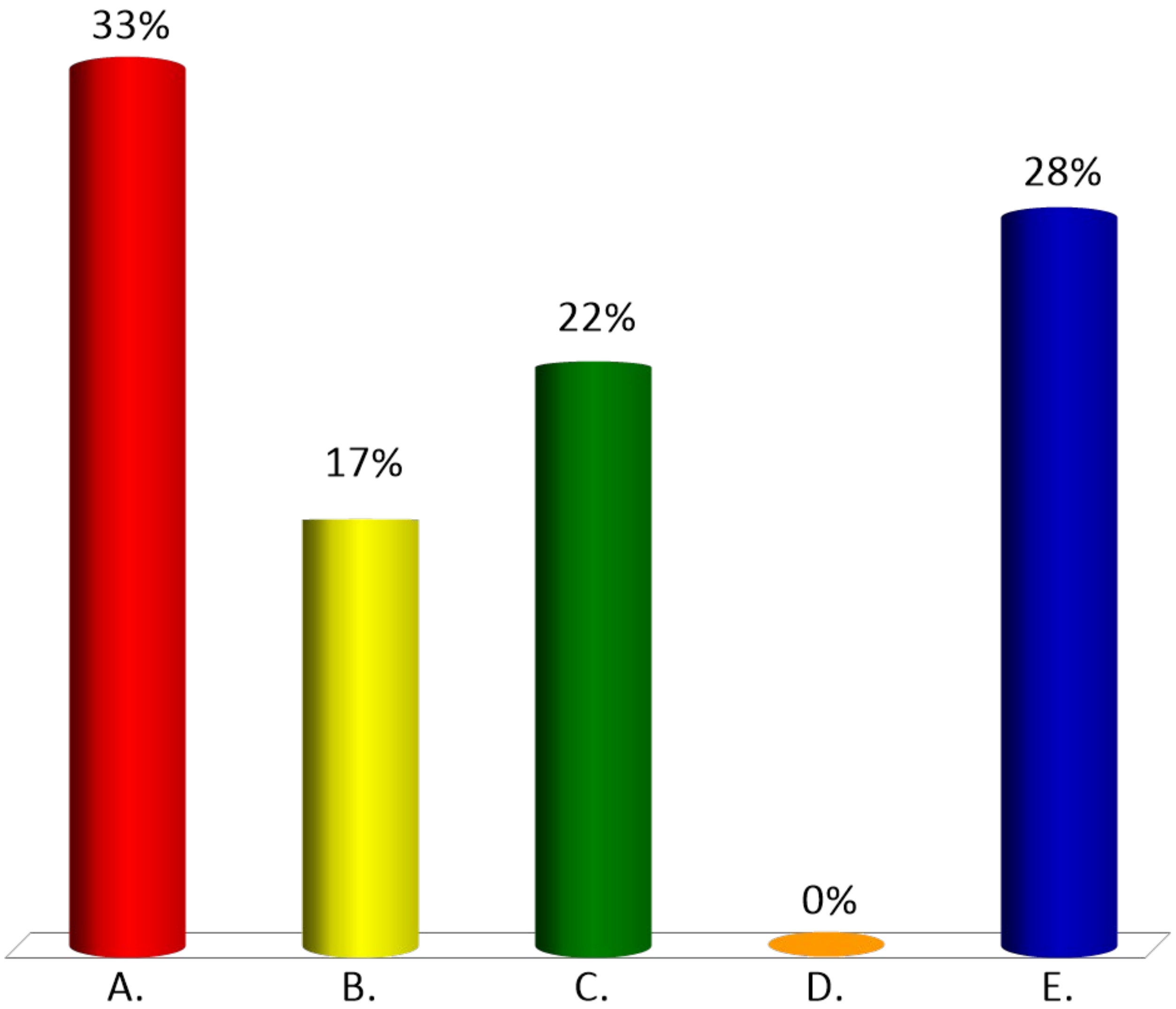

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OR

present as new something that is not new

→ this is what we call plagiarism

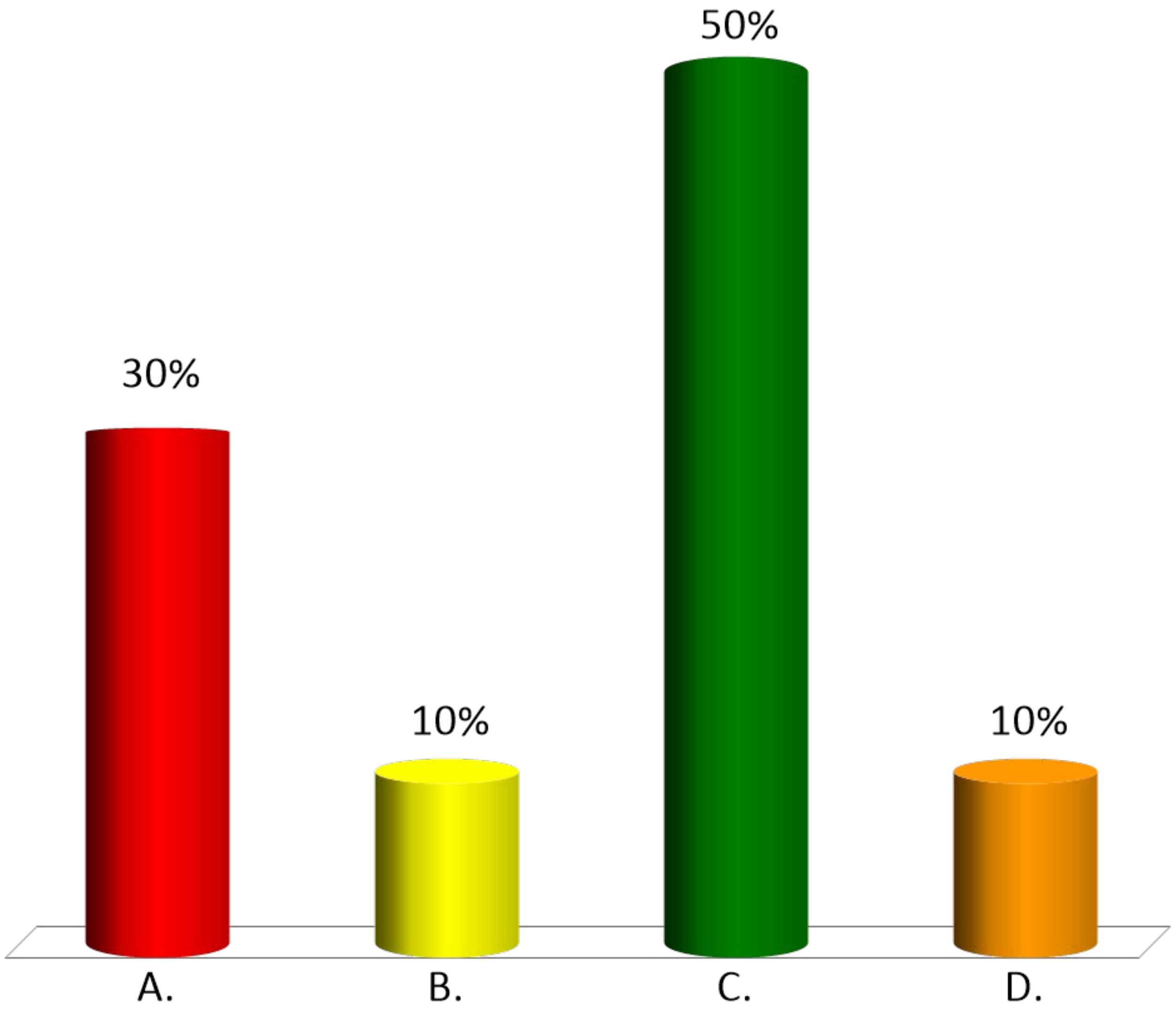
→ no matter if it is intentional or not

2. How to insert a section borrowed from another document? (several answers may be correct)

Highlight the borrowed section...

A. in italics
B. in bold
C. with quotation marks
D. in a separate paragraph

Borrowed sections should be **highlighted** no matter how



How to insert a citation or a section borrowed from another document

Example 1:

In his article *The biology of dying democracies*, Kováč (2019) states that «Marxist communism became a gigantic experiment in the 20th century to test the European rationalism. The experiment failed.»

Example 2:

The approach chosen for this article is the one presented by Kováč in *The biology of dying democracies* (2019), described as follows :

> Humans are controversial beings, an inconsistent mixture of nature and culture and dominated by both. Biological hominization was followed by cultural humanization. So far, biologists mostly tended to conceive the biological individual as a Darwinian unit communicating with another individual in interest of one's own Darwinian fitness. Signals should serve to modify the behaviour of the receiver to benefit the signaller.

How to insert a citation or a section borrowed from another document

Example 3:

Experts believe that information literacy knowledge helps students to judge the appropriateness of information (Smith, 2016, McDowell, 2018 and Alhazmi, 2012).

OR

Experts believe that better information literacy knowledge will help students to judge the appropriateness of information[1-3].

How to insert a citation or a section borrowed from another document

Example 4 – Paraphrasing

The original :

- « A variety of evidence points to the existence of dark matter in the universe. As it is not directly observable with conventional astronomical techniques, we must rely on computer modules to guide our understanding. »

The paraphrase :

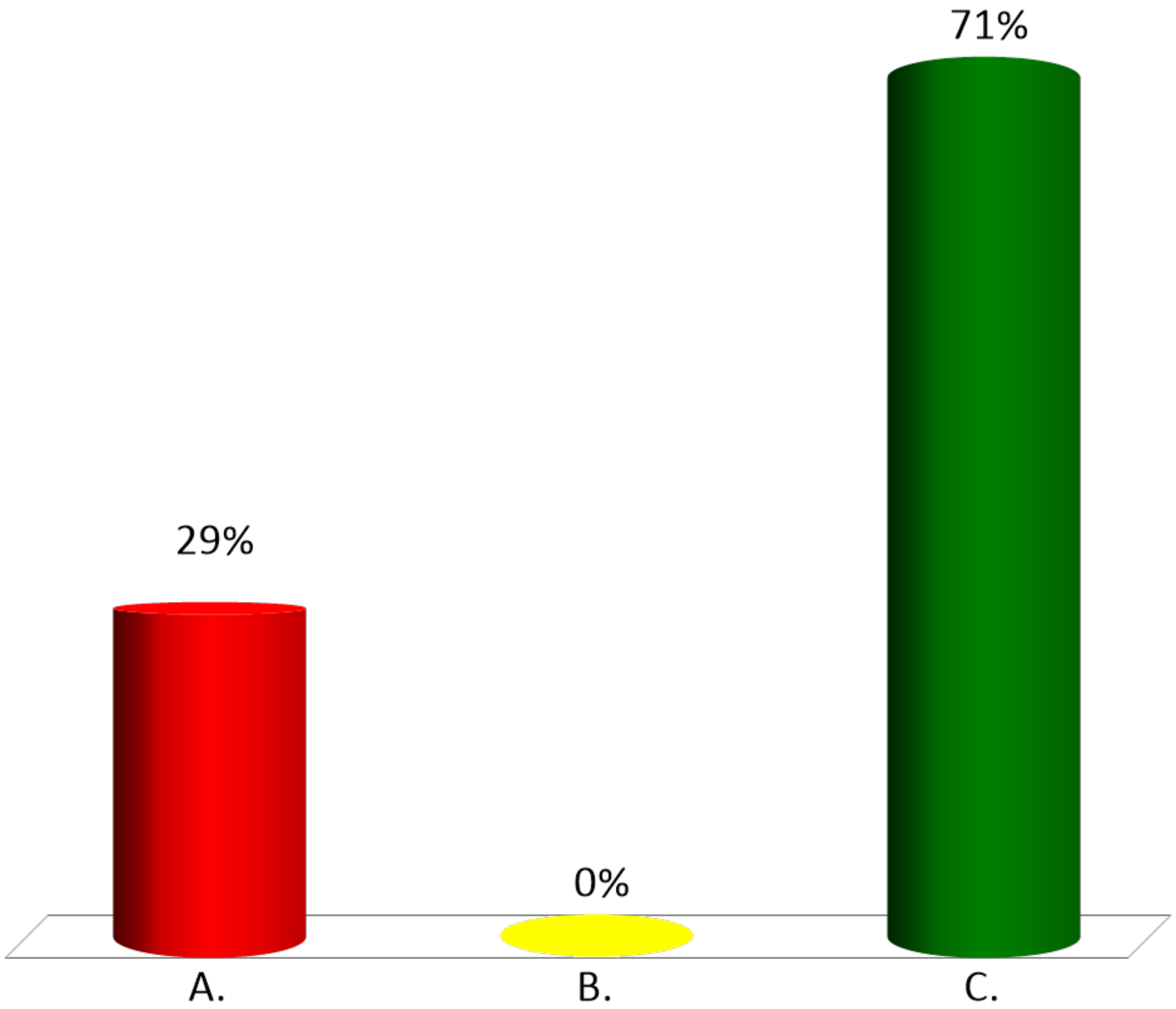
- Research about the universe suggests that dark matter exists. However, scientists must use computer models to learn about it because dark matter can't be studied directly (Lanzel and Barnes, 2009)

Retrieved from « Writing Module : Paraphrasing » https://www.lib.uoguelph.ca/sites/default/files/paraphrase.pdf

3. What should I do to borrow a section from someone else's work?

A. Highlight the borrowed section
B. Ask the permission to the author
C. Cite the original source

Copy-Paste
+
Highlight of the borrowed section
+
Indication of the source



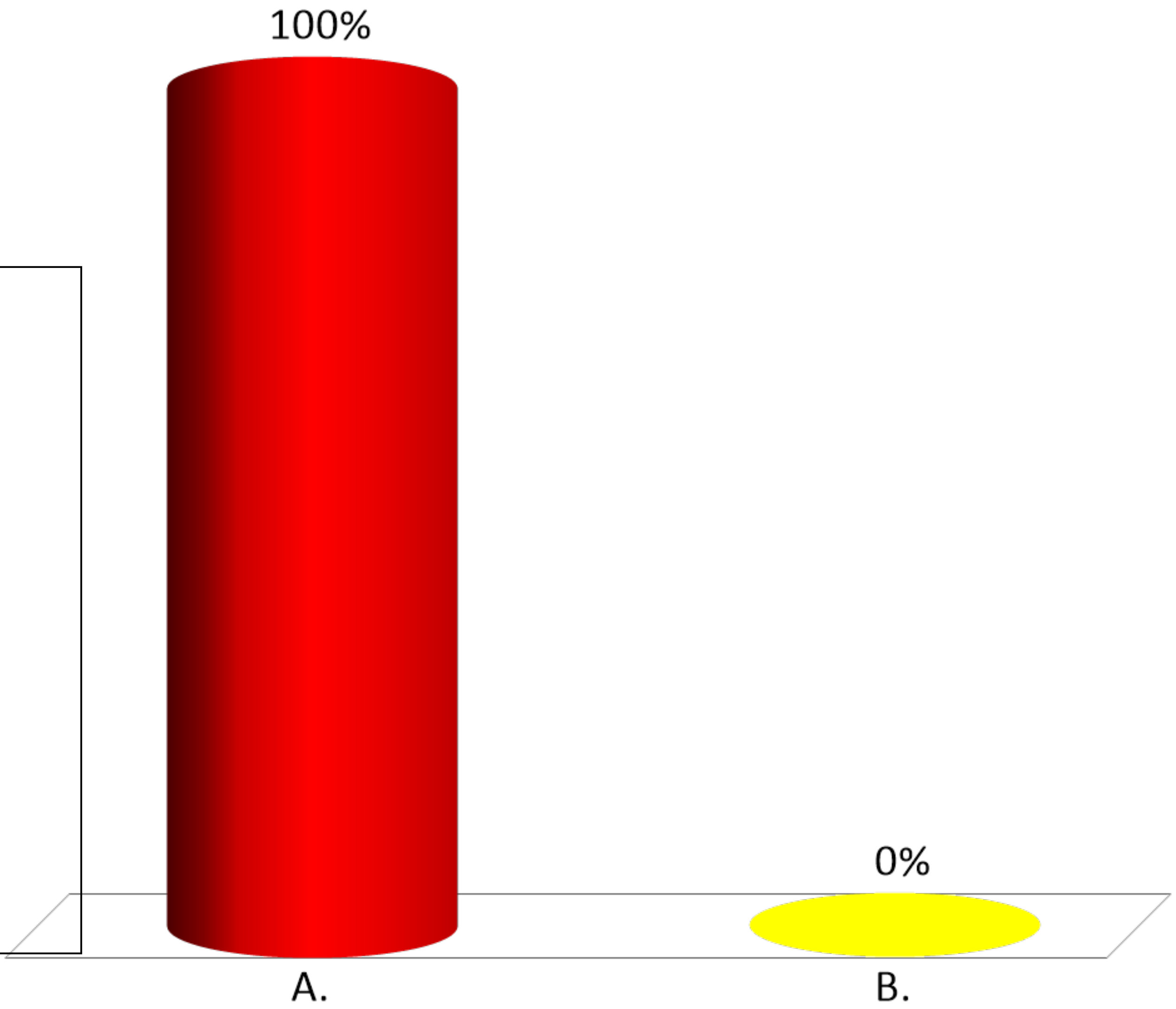
4. If I use a document that has not been published (yet) I need to cite it.

A. True
B. False

Always cite your sources.

Anyway, it would be better not to use documents that are inaccessible to the reader, such as confidential or internal documents

Pre-prints:
Not always accessible for the reader
Various versions



5. I have to cite a document that I published previously.

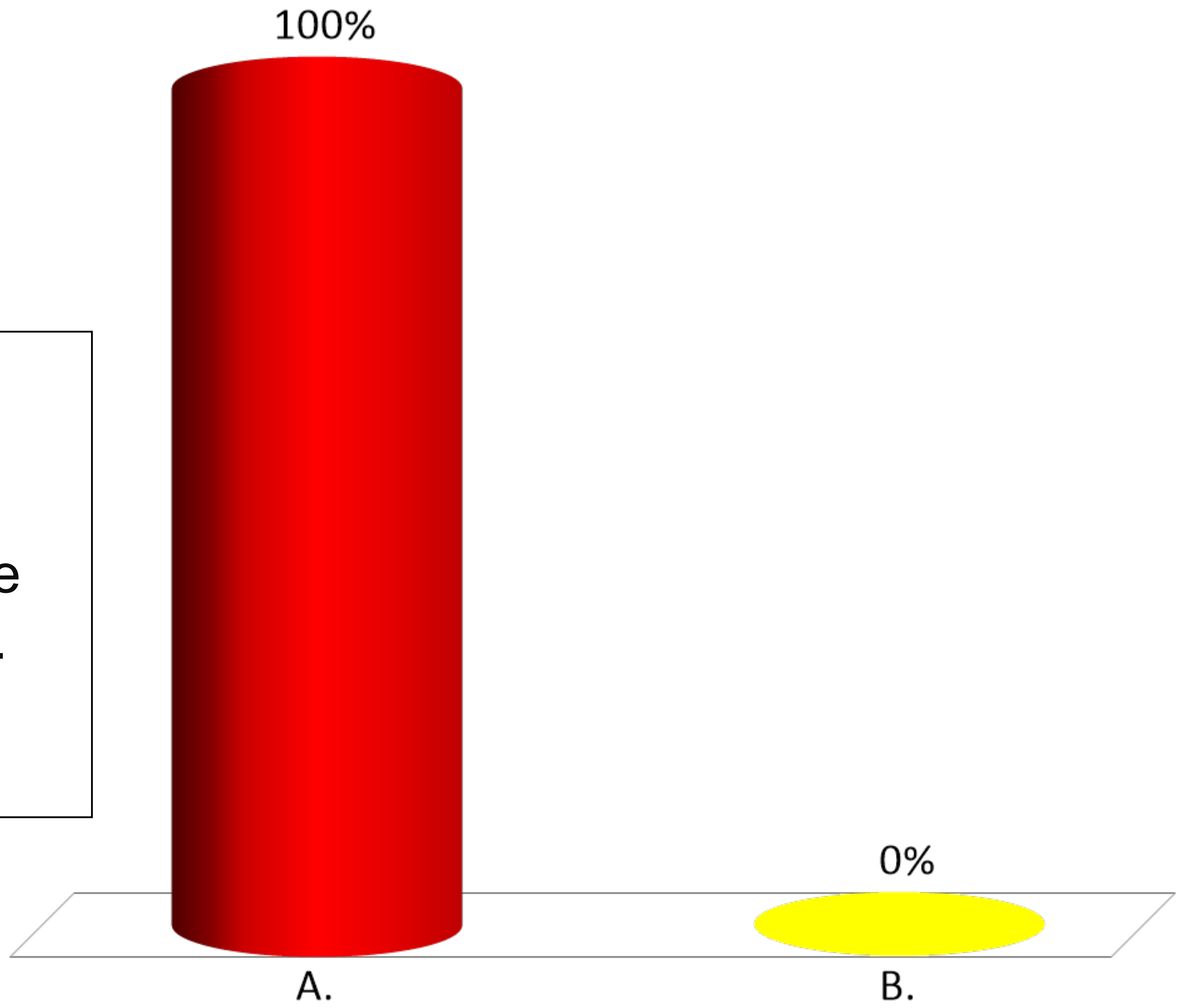
A. True

B. False

Reminder

Citing enables you to make the difference between your **<u>own</u> AND <u>new</u> input** and the ones that come from previous publications.

SELF-PLAGIARISM is also plagiarism

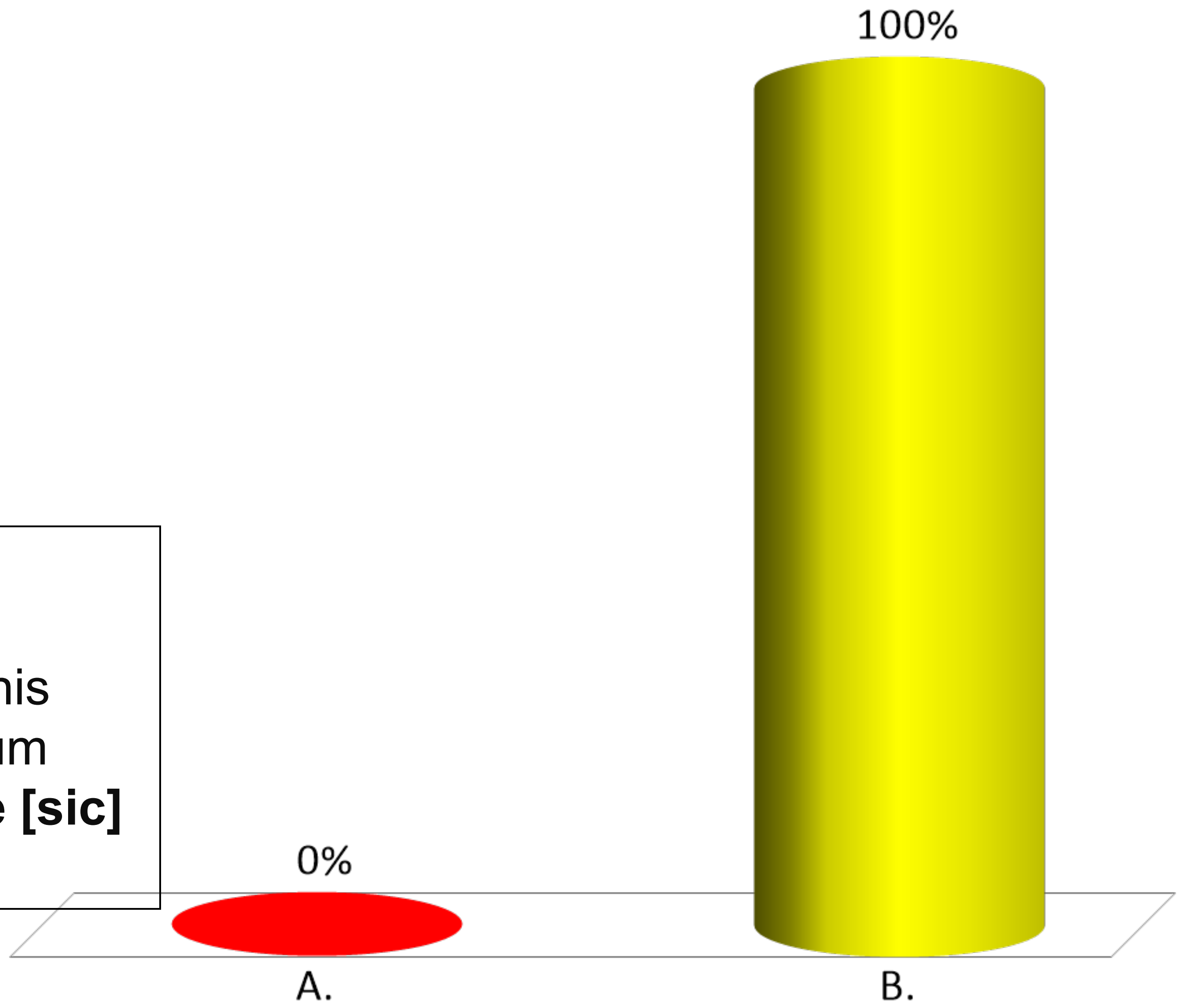


6. I have the right to adapt a quotation.

A. True
B. False

Highlighting modifications

« As **[John Smith]** commented in the 1st chap. of his book **[Introduction to statistics],** statistics hide sum and substance. **[…]** therefore one should not forge **[sic]** that interpretation leads to bias. »



7. In the bibliography, I have to mention everything I have read to write my article/report.

A. True

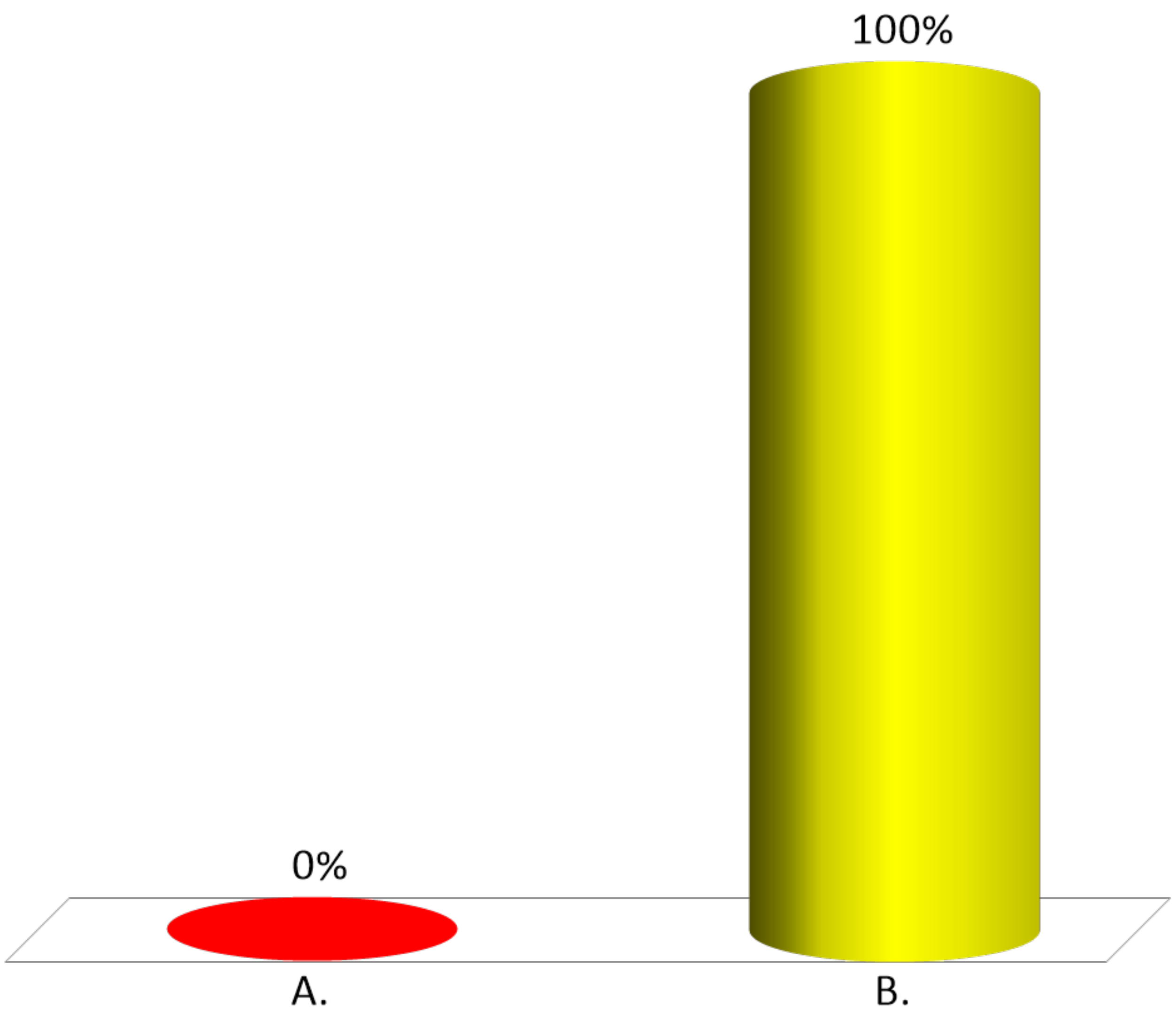
B. False

cited references

→ bibliography

other interesting references

→ separate list



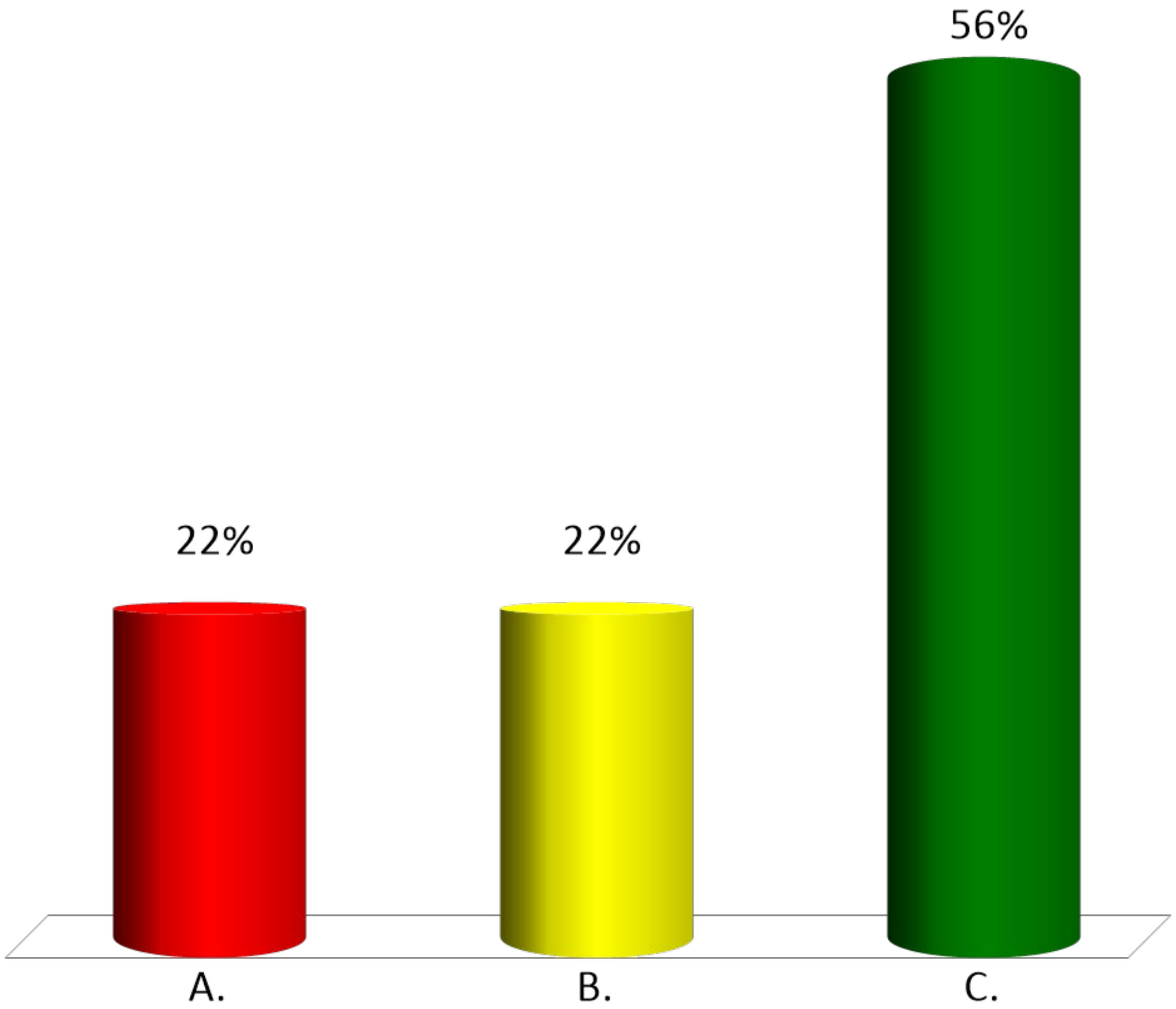
8. To reuse an image or a graph found in another document, I have to: (several answers may be correct)

A. Copy-Paste
B. Obtain the author's permission
C. Cite the source

Image = integral work

Graph = protected layout

cite (correctly) the source
+
Ask explicit authorization from copyright owner



Tips

Image:

Freely usable images under Creative Commons licenses

- ➢ Cite the source
- ➢ Search one of these sites:

- https://www.pexels.com/fr-fr/
- https://www.flickr.com/
- https://commons.wikimedia.org/wiki/Accueil

Graph:

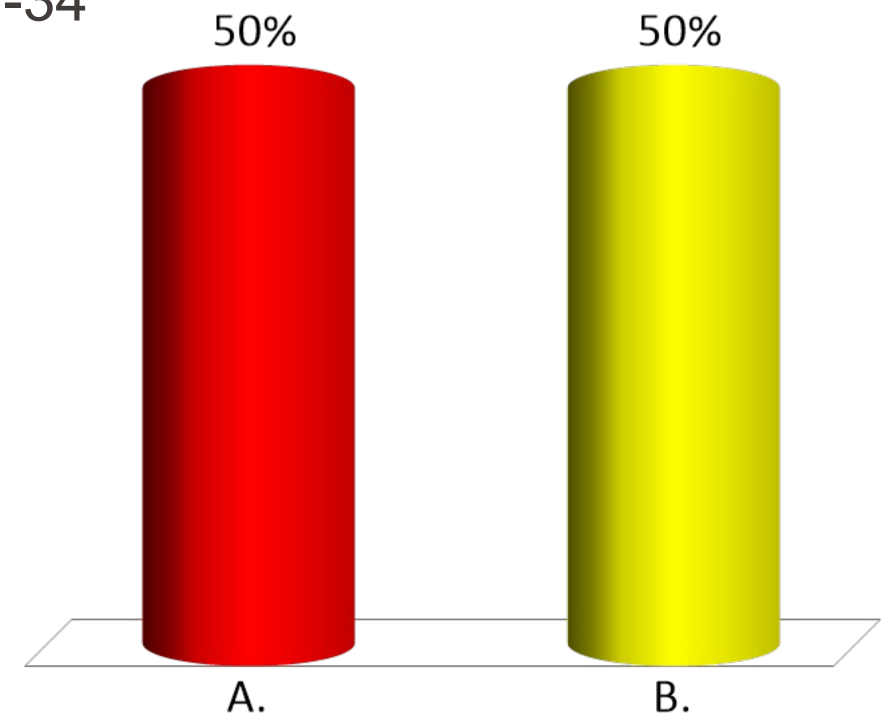
Recreate the graph yourself

- Cite the source

9. You consult an article [1] in which a section from another article [2] (that you haven't read) is cited. You would like to insert this section from article [2] in your report. Which source do you cite?

A. [1] Kim S et Dale BE 2004 *Global potential bioethanol production from wasted crops and crop residues*. Biomass & Bioenergy 26(4): 361-375

B. [2] Zaldivar J, Nielsen J, Olsson L Fuel 2001 *Ethanol production from lignocellulose: a challenge for metabolic engineering and process integration.* Applied Microbiology and Biotechnology 56 (1-2):17-34



Do not cite a document that you have not consulted!

Suggestions

In the text

Kim S. (2004) suggests that the technique described by Zaldivar J. (2001) as « being by far the most efficient on most continents » is not the only way to follow for the development of the bioethanol production.

In the bibliography

Kim S et Dale BE 2004 *Global potential bioethanol production from wasted crops and crop residues.* Biomass & Bioenergy 26(4): 361-375

OR

Zaldivar J, Nielsen J, Olsson L Fuel 2001 *Ethanol production from lignocellulose: a challenge for metabolic engineering and process integration*. Applied Microbiology and Biotechnology 56 (1-2):17-34 **cited by** Kim S et Dale BE 2004 *Global potential bioethanol production from wasted crops and crop residues.* Biomass & Bioenergy 26(4): 361-375

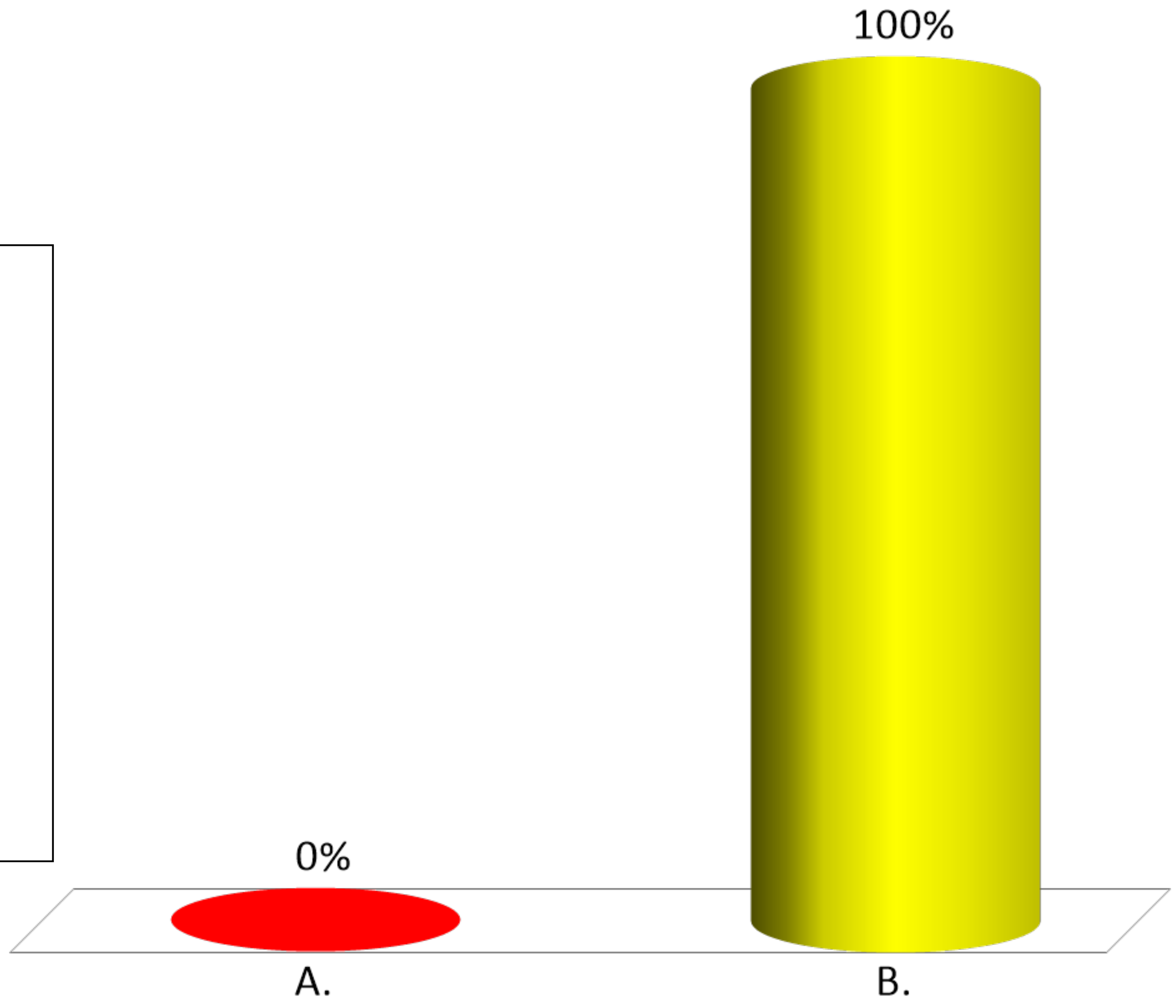
10. To cite a webpage, it is enough to simply indicate the URL

A. True

B. False

URL is useful but not enough, because
- not permanent

Reference to a webpage:
page title, author, website title, URL, consultation date (or time)
+ any piece of information that may help to identify the source



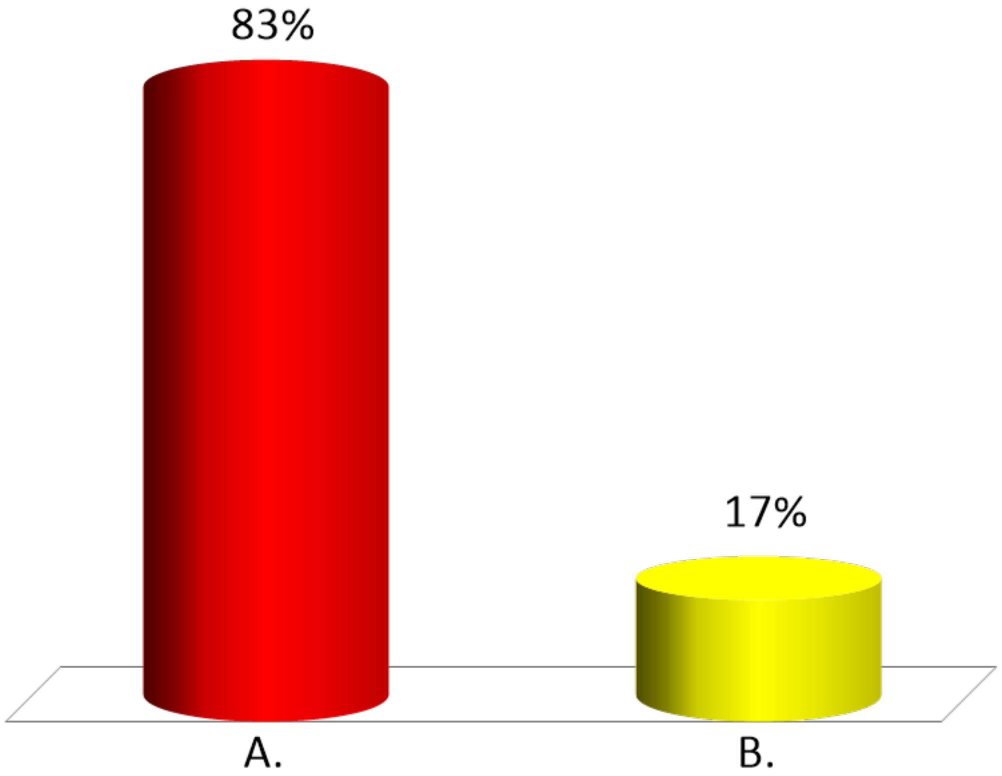
11. Which reference is correct?

A. MONTGOMERY, Douglas Carter, 2013. Design and analysis of experiments. 8e éd. Hoboken, N.J : John Wiley & Sons. ISBN 978-1-1180-9793-9.

B. 1. Montgomery, D. C. Design and analysis of experiments. (John Wiley & Sons, 2013).

You
Check that the collected information is <u>correct and complete</u>.

Tip: use a reference manager software
like Zotero to create a bibliography according to the chosen citation style.



To know more about citation…

Refer to our Rational Bibliographic **guide** to create and verify your references: go.epfl.ch/guide-bibliographique

zotero

EPFL

Bibliothèque

Thanks

Contact us
library@epfl.ch
021 693 21 56

Book a librarian

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