Communication in Science / 2

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Scientific Paper

A scientific paper should:

- Present the facts in an unbiased manner
- Be clear: concise and complete
- Use facts to make statements
- Be complete enough that other scientists can repeat your work (research papers)

A scientific paper should not:

- Be haphazard, jumbled and illogical
- Be used as your own personal soapbox
- Reach conclusions not based on evidence reported
- Be for insiders only

Scientific *Review* Paper

A good *review* paper should:

- Bring together published material for the purpose of:
  - Evaluation
  - Discussion
  - Dissemination
  - Tutorial
- Present pertinent facts about the subject
- Be up to date about the progress in the area
- Give some conjecture about the future of the area

Do not present experimental results

Anatomy of a Scientific Paper

- Title
- Abstract
- Introduction
- Background (Introduction and Background often together)
- Current Research (Results in research paper)
- Future Directions (Discussion in research paper)
- Summary and Conclusions
- References (Bibliography)

Organization of a Scientific Paper

- Title
  - Clear definition of what you are talking about
- Abstract
  - Write after the paper is fully written
  - Summary of what paper is all about
- Introduction
  - Very brief, general discussion of the area
- Background (Introduction and Background often together)
  - General information about the field
  - Bring the reader to the level necessary for understanding of the "Current Research" section
  - Review current literature in the field, cite 5-10 papers
- Current Research (Results in research paper)
  - Organize with sections
  - Make reader understand where your research fits into

Organization of a Scientific Paper

- Conclusions
  - Short and up to a point, not copy-and-paste of the current research
- Bibliography
  - Properly organized and formatted

Title

- The *fewest* words possible that cover the purpose of the paper
  - Einstein, "Everything should be made as simple as possible, but not simpler.”
- NVR. U. ABBRVS. In a TTL. Like OMG. WTF. BBQ.
- Include technique or method (Research Paper)
- Include author’s name and affiliation (University of Nova Gorica)

Abstract

- A short paragraph which summarizes the paper. A good abstract contains:
- Concise statement that describes the purpose of the paper
- Includes results and conclusion (specific but not detailed)
- Is written last
- Does not include anything that is not in the paper
- For reviews, perhaps include limited citation sources and the scope of the review

Introduction

- Should be a clear statement of the study's objective
- You are introducing the topic:
  - State the relevance of the topic
  - Give the purpose of the paper
  - Include breadth of the coverage
- Mention previous reviews in the same area

Background

- Define and explain the terms, concepts, and theories necessary to understand the paper
- Be as short and complete as possible
- The background has two purposes:
  - To set up the context for the discussion in the body of the paper
  - Allow a scientist to become familiar with the theoretical groundwork of the subject

Current Research (Results)

- Use sub-titles to organize the material
- Use introductory sentences to keep the reader focused
- Present material in a logical fashion
- Provide details as needed
- Add “in comparison” and “contrast” information (if appropriate for paper)

Future Directions

- Summarize the current direction of the area chosen
- Discuss problems, challenges, and obstacles future research faces
- Predict (based on information) where you think this area of research is headed (or where you think it should be headed)
- Be realistic:
  - We will not all be living on Mars in twenty years
  - Almost everyone does have a computer today

Summary and Conclusions

- Short and sweet
- Remember your stated an objective!
- Summarize the paper (look at your abstract) and state your conclusions
- Don’t try to sell your conclusions (the readers have reached their conclusions based on the facts you presented). Incredible claims require incredible proof!
- Try to anticipate and respond to potential questions

References

There are three major styles

- Name and year
  - These references are planed at the end of the sentence in parentheses (Einstein, 1955)
  - Index is then alphabetical, using years as secondary
- Italic number in line
  - Place number in parentheses or brackets at the end of the sentence (*34*) or [*34*]
  - Index is in the order of appearance
- Superscript numbers
  - These numbers appear at the end of a line after the period.34
  - Index is in the order of appearance

Be complete, correct, and consistent

Acknowledgements

- You did not just win an Oscar (forget about friends and family)
- You may wish to thank
  - Proofreaders
  - Mentors
  - Colleagues who helped
  - Information source?
  - Institution

Writing Style

- Use short sentences
- Be unambiguous
- Primarily passive voice
  - Use active if it is less wordy
- Primarily past tense
  - Use present tense in results, discussions, conclusions if appropriate
- Avoid first person singular/plural wherever possible
  - Don’t confuse the sentence
- Be gender neutral

Other Thoughts

- Do a spell check! (even if it may be tedious)
- Don’t talk down to the reader
- Avoid blather (“ne nakladaj”)
- Do not plagiarize
  - Taking parts of sentences or complete sentences directly from papers
  - Use quotes if necessary and cite work. (*use very sparingly*)
- Have someone else critically read the paper

Proofreading

- Content, grammar, spelling, format
- Use proofreading marks
- Check for words like from(form), there (their)
- Capitalization
- Read a sentence and identify if it says what you meant it to say
- Spell check! (It’s free)

Plagiarism

- PLAGIARISM: **Intentionally or knowingly presenting the work of another as one's own** (i.e., without proper acknowledgment of the source). The sole exception to the requirement of acknowledging sources is when the ideas, information, etc. are common knowledge (i.e. Newton's laws,...)

Peer Review Process

- Peer review is an essential aspect of publication in scientific journals.
- The fundamental role of the reviewer is to provide advice to the Editor or Assistant Editors on the virtues, or lack thereof, of a manuscript submitted for publication.
- Reviewers who will have the most direct and expert knowledge of the field addressed by the manuscript, so that the reviewer's advice is critical to the Editor's decision, not only in evaluating whether the manuscript should be accepted for publication but also in helping to make the manuscript as useful as possible to readers.
- Under evaluation: Scientific correctness and originality, coverage of the relevant literature, pertinence, significance, conciseness, and general impressions.

Technicalities: Hyphenation

- If you want to avoid problems, just don’t use hyphens
- The rules are complex, are changing all the time and vary from journal to journal and country to country
- Hyphens have two main purposes
  - To divide words
  - To compound words

Hyphenation for dividing words

- **To divide long words at the end of lines, particularly if the text is justified**
  - There are many difficulties in understanding compound English words and one of these is "antidissestablishmentarianism".
  - There are many difficulties in understanding compound English words and a rare one of these is "antidissestablishment-arianism".

- If you produce your manuscripts as left justified you can leave this problem to the production end of the printing process
  - Do not trust automatic word processing hyphenation
  - However, the rules are:
    - Divisions should be between syllables
    - Not all such divisions are acceptable, see a dictionary.
    - Anti-dissestablishmentarianism or antidissestablishment-arianism
    - Not antidiss-establishmentarianism or antidissestablishmentar-ianism

Hyphenation for compounding words

- One way to avoid problems with hyphens and compound words is to check a good unabridged dictionary
- Classically, the rules follow from
  - Compound word temporary, use hyphen
  - Compound word permanent, no hyphen
  - Compound word forms a single concept, no hyphen
- The use of hyphens in scientific writing is on the decline and there is a preference to use new single term words or modified words without hyphens
  - postoperative rather than post-operative
  - even antiinflamatory rather than anti-inflamatory

Hyphenation Rules

- To create compound modifiers that precede a noun
  - Pollen-bearing hairs (not really needed usually)
- To avoid ambiguity
  - The food co-op bought a chicken coop
  - The animals were re-covered to allow them to recover
- In compound numbers from 21 to 99
  - Twenty-one, ninety-nine (Only if you have to use a number at the start of a sentence
- In fractions and ratios that are adjectives
  - A four-to-one ratio (rather use “a ratio of 4:1)
- To reduce repetition in a series
  - The first-, second- and third-born offspring were larger (Not usually necessary)
- With a letter or number
  - H-bomb (now really a single word) or 5-week-old chick
- With strings of modifiers that express a single thought and without a starting adverb
  - Green-algae covered ponds but freshly collected samples
- As a prefix to a proper noun
  - Pre-Darwinian (but do see “postdarwinian theories of evolution”, but really wrong)
- When the same vowel ends the prefix and starts the word
  - Pre-existing and anti-inflamatory (but less often recently)
- Except if there is an awkward letter combination, do not use with pre, post, re, sub, super, micro, mini, multi, non.
- Finally, **use as little as possible and be consistent**, and the editor will probably not care

Literature search at UNG

Use our UNG library!

- http://www.ung.si/sl/knjiznica/
- http://www.ung.si/en/library/

It includes

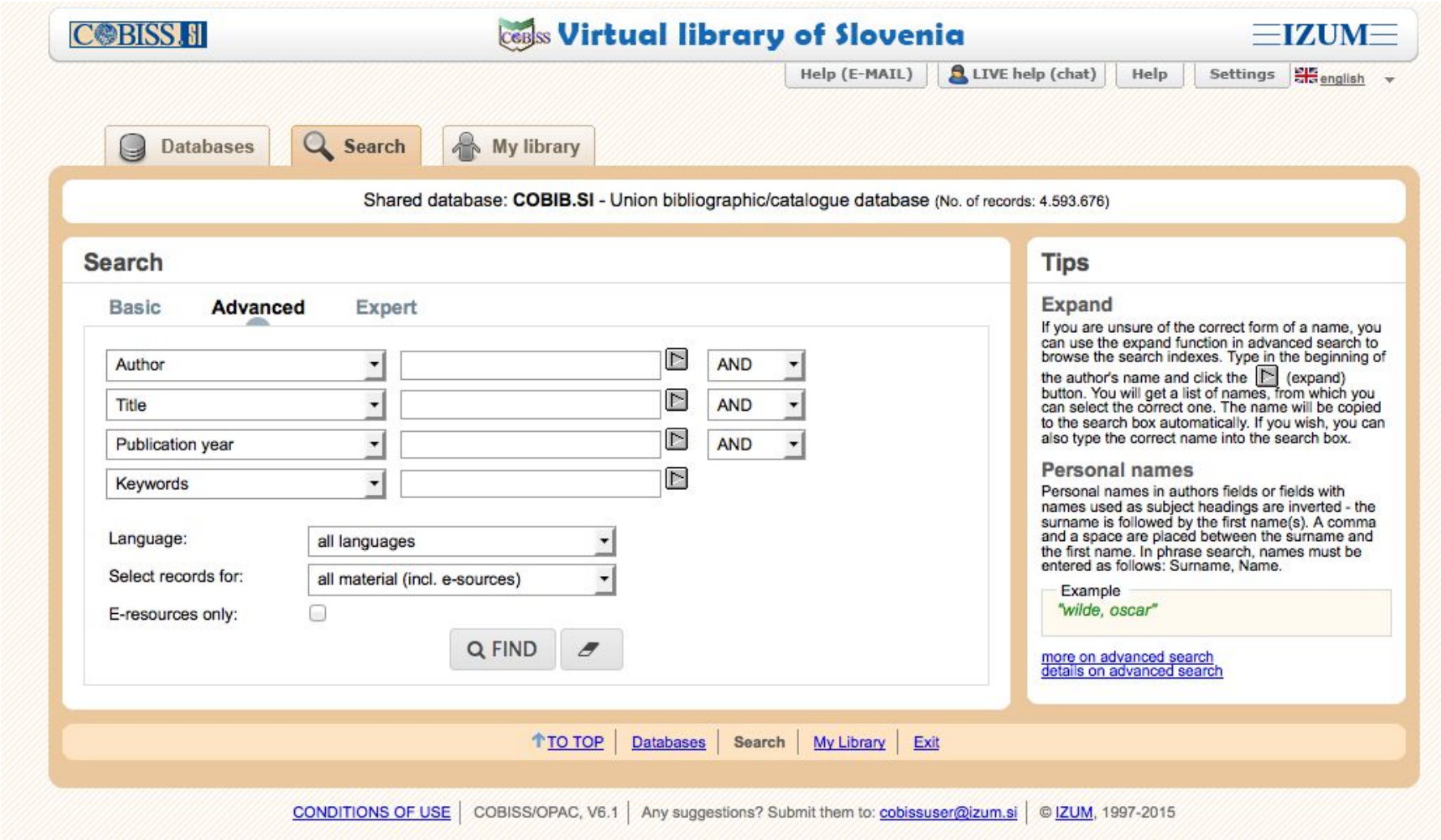
- more than 15.000 books
- 150 titles of periodicals
- 400 items of non-book materials (mostly CD-roms)
- e-editions of scientific journals

(reachable over services like ScienceDirect, Springer Link, APS Journals, JSTOR, CAB abstracts, FSTA, ACS Publications, IEEE/IET Electronic library, MathSciNet, Web of Science, EIFL Direct-data bases EBSCOhost)

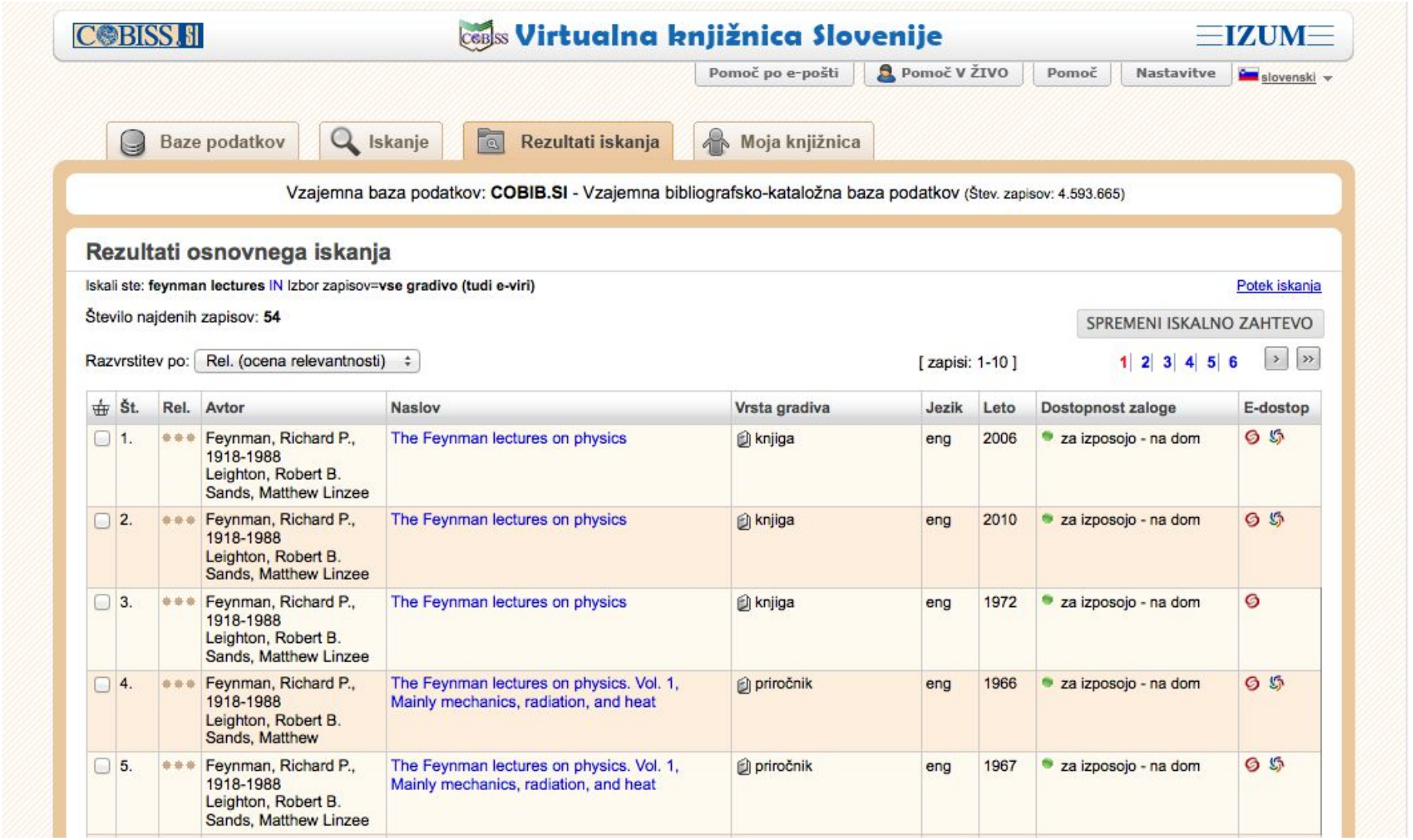
IZUM
Institute of Information Science, Maribor, Slovenia

Slovenian library co-operative online bibliographic system & service - COBISS

Searching for books and publications



Searches



Št.	Rel.	Avtor	Naslov	Vrsta gradiva	Jezik	Leto	Dostopnost zaloge	E-dostop
1.		Feynman, Richard P., 1918-1988 Leighton, Robert B. Sands, Matthew Linzee	The Feynman lectures on physics	knjiga	eng	2006	za izposojo - na dom	
2.		Feynman, Richard P., 1918-1988 Leighton, Robert B. Sands, Matthew Linzee	The Feynman lectures on physics	knjiga	eng	2010	za izposojo - na dom	
3.		Feynman, Richard P., 1918-1988 Leighton, Robert B. Sands, Matthew Linzee	The Feynman lectures on physics	knjiga	eng	1972	za izposojo - na dom	
4.		Feynman, Richard P., 1918-1988 Leighton, Robert B. Sands, Matthew	The Feynman lectures on physics. Vol. 1, Mainly mechanics, radiation, and heat	priročnik	eng	1966	za izposojo - na dom	
5.		Feynman, Richard P., 1918-1988 Leighton, Robert B. Sands, Matthew Linzee	The Feynman lectures on physics. Vol. 1, Mainly mechanics, radiation, and heat	priročnik	eng	1967	za izposojo - na dom	

Search results

COBISS.SI | Virtualna knjižnica Slovenije | IZUM

Pomoč V ŽIVO | Pomoč | Nastavitve | slovenski

Baze podatkov | Iskanje | Rezultati iskanja | Zapis | Moja knjižnica

Lokalna baza podatkov: **Univerza v Novi Gorici** (Štev. zapisov: 24.159) | Oddelek: vsi oddelki |

Izbrani zapis

trajna povezava

Polni | ISBD | COMARC

zapis [1/1]

Avtor	Feynman, Richard Phillips
Naslov	Feynman lectures on computation / Richard P. Feynman ; edited by Anthony J. G. Hey, Robin W. Allen
Vrsta/vsebina	knjiga
Jezik	angleški
Leto	1996
Založništvo in izdelava	London [etc.] : Penguin Books, 1999, cop. 1996
Ostali avtorji	Hey, Anthony J. G. Allen, Robin W.
Fizični opis	XIV, 303 str. : ilustr. ; 24 cm
Opombe	Kazalo
ISBN	ISBN 0-14-028451-6
Predmetne oznake (nekontrolirane)	računalništvo / obdelava podatkov
UDK	681.3.01
COBISS.SI-ID	1775444

SFX | ZALOGA V DRUGIH KNJIŽNICAH | → | MEDKNJIŽNIČNA IZPOSOJA | SPREMENI ISKALNO ZAHTEVO

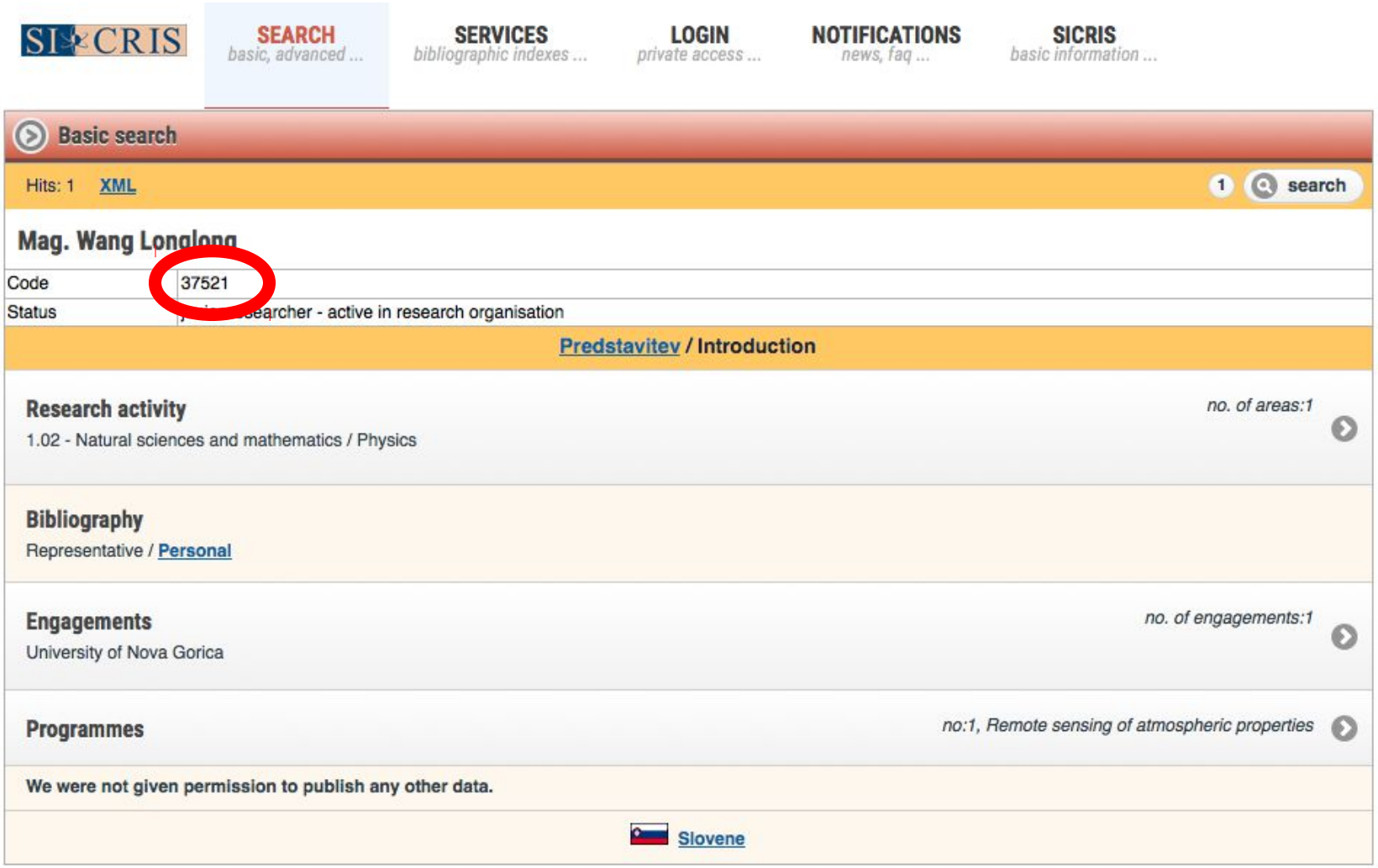
zapis [1/1]

Statusi v izposoji

Št.	Podatki o izvodu (signatura - lokacija, inventarna št. ...)	Status izvoda	Rezervacija
1.	K M 004 FEYNMAN R P Feynman	prosto - na dom, čas izposoje: 21 dni	

Slovenian Current Research Information System - SICRIS

Researchers ID



IZUM
Institute of Information Science, Maribor, Slovenia

Bibliography

COBISS Co-operative Online Bibliographic system & services COBISS

Maruška Mole [36474] Researcher's ID

Personal bibliography for the period 2008-2015

ARTICLES AND OTHER COMPONENT PARTS

Typology

1.12 Published scientific conference contribution abstract

1. MOLE, Maruška, BERGANT, Klemen, HONZAK, Luka, RAKOVEC, Jože, SKOK, Gregor, STANIČ, Samo, ŽABKAR, Rahela, ŠKRABA, Primož. Analysis of measurements of the Bora wind in Vipava valley. V: *European Geosciences Union, General Assembly 2014, Vienna, Austria, 27 April-02 May 2014* [Geophysical research abstracts, ISSN 1607-7962, vol. 16). München: European Geosciences Union, 2014. http://meetingorganizer.copernicus.org/EGU2014/EGU2014-5702-1.pdf. [COBISS.SI-ID 319657] Paper ID

1.25 Other component parts

2. MOLE, Maruška. Uporaba računalniških metod v meterologiji in astronomiji. *VideoLectures.net*, 29. mar. 2014, [51 min, 55 sek]. http://videolectures.net/rtk2014_mole_astronomija/. [COBISS.SI-ID 3349499]

MONOGRAPHS AND OTHER COMPLETED WORKS

2.11 Undergraduate thesis

3. MOLE, Maruška. *Izračun prostorske porazdelitve trajanja snežne odeje z uporabo satelitskih meritev : diplomsko delo*. Ljubljana: [M. Mole], 2013. 57 str., ilustr. [COBISS.SI-ID 302249]

Eligibility for Slovenian national grant calls

Dr. Samo Stanič [14573]

Bibliografski kazalci raziskovalne uspešnosti (2010-2015)

Kategorizacija po metodologiji ARRS - naravoslovje

Število bibliografskih enot																	Citati WoS				Citati Scopus			
(1)		1A1	1A2	1A3	1A4	1B		1C	1D					Z	NK	A"	A'	$A^{1/2}$	TC	CI	CI_{Au}	NC	TC	CI	CI_{Au}	NC
1.01		122	12	5	2	14		0	0					155	0	30	122	134	890	710	32.10	253	1062	921	42.38	332
1.02		0	1	0	0	0		0	0					1	0	0	0	1	5	4	0.15	1	3	3	0.11	1
1.03		0	0	0	0	0		0	0					0	0	0	0	0	0	0	0	0	0	0	0	0
(2)	2A						2B	2C	2D	2E	2F	2G	2H	Z	NK	A"	A'	$A^{1/2}$								
2.01	1						0	0						1	0	1	1	1								
2.18									0					0												
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2.20													0	0	0											
(3)	3A	1A1	1A2	1A3	1A4	1B	3B	3C	3D					Z	NK	A"	A'	$A^{1/2}$	TC	CI	CI_{Au}	NC	TC	CI	CI_{Au}	NC
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(4)								4C	4D					Z	NK				TC	CI	CI_{Au}	NC	TC	CI	CI_{Au}	NC
1.06								0	0					0	1				0	0	0	0	0	0	0	0
1.08								52	0					52	76				0	0	0	0	14	11	0.51	11
															SU				TC	CI	CI_{Au}	NC	TC	CI	CI_{Au}	NC
Str.d.															37				0	0	0	0	0	0	0	0
														Z	S	A"	A'	$A^{1/2}$	TC	CI	CI_{Au}	NC	TC	CI	CI_{Au}	NC
SKUPAJ														210	114	31	124	138	895	714	32.25	254	1079	935	43.00	344

Kvantitativne ocene		
A_1 - objave	**Točke**	**Ocena**
Upoštevane točke	1033.82	2.76
A" - izjemni dosežki	287.54	0.19
A' - zelo kvalitetni dosežki	794.50	0.53
$A^{1/2}$ - pomembni dosežki	853.48	0.57
Ocena A_1		**4.05**
A_2 - citiranost	**Podatki**	**Ocena**
NC_{10} - normirano število čistih citatov v zadnjih 10 letih (2005-2015)	6004	10.00
Faktor vpliva člankov $1/5(N_c/N_{\check{c}})$ v zadnjih 5 letih (2010-2015)		1.00
$N_{\check{c}}$ - število znanstvenih člankov, objavljenih v zadnjih 5 letih	156	
N_c - število citatov, ki jih je $N_{\check{c}}$ člankov prejelo v zadnjih 5 letih v bazi Scopus	1065	
Ocena A_2		**10.00**
CI_{10} - število čistih citatov znanstvenih del v zadnjih 10 letih (2005-2015)	12298	
CI_{max} - najodmevnejše delo v zadnjih 10 letih (2005-2015)	658	
h-indeks v zadnjih 10 letih (2005-2015)	55	
Nh-indeks - normirani h-indeks v zadnjih 10 letih (2005-2015)	34	
A_3 - sredstva izven ARRS		**Ocena**
A_{32} - sredstva po pogodbah z gospodarstvom		1.12
A_{31} - sredstva mednarodnih projektov		2.55
A_{33} - sredstva drugih ministrstev		0.53
A_{34} - druga sredstva		0.03
A_{35} - druga gospodarska sredstva		0.01
Ocena A_3		**4.24**
A - skupna ocena		**Ocena**
Ocena $A = A_1 + A_2 + A_3$		**18.29**

Other databases

- full-text scientific database
  http://www.sciencedirect.com/
- Web of Science – multidisciplinary database
  http://webofknowledge.com/WOS
- High-Energy Physics Literature Database
  https://inspirehep.net/

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