

# ABSTRACTS

*(Materials about an abstract prepared by Robert Helán)*

Lead-in. In pairs, discuss the following questions.

- 1) What is the purpose of an abstract?
- 2) How can an abstract help a researcher choose which papers to read?
- 3) What information does the abstract usually include?
- 4) Why do some people think a good abstract is even more important in the Internet age than it was before?

Listen to and watch the video “Writing (Good) Abstracts” and list the most common abstract styles and their characteristics.

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

<b>STRUCTURE-SPECIFIC      SECTIONS</b>
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- |   |
|---|
| <ol style="list-style-type: none"><li>1. Background/introduction/situation</li><li>2. Present research/purpose</li><li>3. Methods/materials/subjects/procedures</li><li>4. Results/findings</li><li>5. Discussion/conclusion/implications</li></ol> |
|---|

*Ex. 1: Each section answers some implied questions. Match the following questions with the sections above.*

- a. What was discovered? Section \_\_\_\_
- b. How was the research done? Section \_\_\_\_
- c. What do we know about the topic and why is it important? Section \_\_\_\_
- d. What do the findings mean? Section \_\_\_\_
- e. What is this study about? Section \_\_\_\_

*Ex. 2 : Read those three abstracts of mathematical papers and find the corresponding parts.*

<http://www.palgrave-journals.com/jors/journal/v61/n2/full/jors2008144a.html>

### **Deterministic Mathematical Modelling for the Spatial Allocation of Multi-Categorical Resources: with an Application to Real Health Data**

Richard S. Segall

This paper presents some mathematical formulations of deterministic non-linear optimization models for planning the spatial distribution of public service facilities and their utilization. The modelling is performed as a function of multi-categorical resource types and the consumer's zone of residence over a large geographical domain. The mathematical solution to the deterministic model, its parameter estimation by log-linear regression, and some preliminary results of simulation for a Massachusetts hospital database are presented.

### **Enterprise risk management: coping with model risk in a large bank**

D Wu and D L Olson

Enterprise risk management (ERM) has become an important topic in today's more complex, interrelated global business environment, replete with threats from natural, political, economic, and technical sources. Banks especially face financial risks, as the news makes ever more apparent in 2008. This paper demonstrates support to risk management through validation of predictive scorecards for a large bank. The bank developed a model to assess account creditworthiness. The model is validated and compared to credit bureau scores. Alternative methods of risk measurement are compared.

<http://www.sciencedirect.com/science/article/pii/S0307904X15002474>

### **Numerical solution of nonlinear Volterra integro-differential equations of fractional order by the reproducing kernel method**

[Wei Jiang](#)

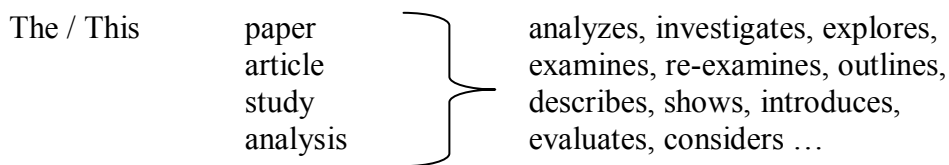
Fractional calculus is an extension of derivatives and integrals to non-integer orders. It has been used widely to model scientific and engineering problems. In this article, the reproducing kernel theory is applied to solve a kind of nonlinear fractional order Volterra integro-differential equation. The fraction derivatives are described in Caputo sense. In order to solve this kind of equation, we discuss and derive the approximate solution in the form of series with easily computable terms in the reproducing kernel space, by introducing a simple algorithm to implement this process. Some numerical examples are given to demonstrate the validity and applicability of the technique.

*Ex. 3: Answer the following questions.*

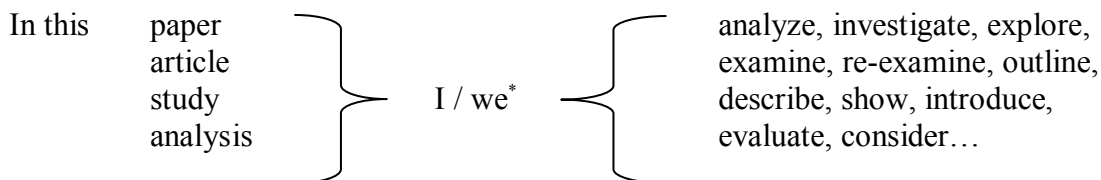
- Are introductory statements general or specific?
- Are they in first person or third person style?
- What tense is used?

**Language for presenting the research/purpose**

▪ Third person style:



▪ First person style:



*Ex. 4: Read the sentences below and fill in the gaps with one of the following verbs:*

**develops - calls - argues - provides - looks - consider**

- This paper \_\_\_\_\_ an axiomatic basis for a representation of personal preferences in which ...
- The authors \_\_\_\_\_ a broad class of situations where a society must choose from a finite set of alternatives.
- This paper \_\_\_\_\_ that the analysis of these games involves a key technical issue.
- This paper \_\_\_\_\_ at the effectiveness of the Environmental Protection Agency (EPA) in reducing the time that manufacturing plants spend in a state of non-compliance.
- This study \_\_\_\_\_ into question the established view that lack of information on clean-up cost functions represents a serious problem ...
- This paper \_\_\_\_\_ a model of corporate hierarchy in which workers accumulate heterogeneous human capital suitable for different positions within the hierarchy.

*Ex. 5: Sometimes, the Methods section sentences are expressed in the passive form. Rewrite the following sentences using the passive voice.*

- We compared the alternative methods of risk measurement.
- 

\* Only in case there are more authors than one.

- b. We discuss and derive the approximate solution in the form of series with easily computable terms in the reproducing kernel space.
- 

- c. We presented the mathematical solution to the deterministic problem.
- 

### Language for presenting the findings

The results findings } show, state, suggest, uncover,  
indicate, imply, provide...

*Ex. 6: Read the following sentences from different abstracts. Each sentence contains a problem in usage (grammar or vocabulary). Identify and fix the problems.*

- a. In this contribution are described several problems with the kernel method.
- b. We are also focused on the implementation of new technologies for the risk management in large banks.
- c. The aim of the paper is to deal with the problematic of enterprise risk management.
- d. It was tested by the study whether specific bacteria would react to the applied strategies...
- e. The paper is devoted to the analysis of problems with deterministic models.
- f. Laboratory animals are not susceptible to these diseases, so research on them is hampered.
- g. Our results are similar to previous studies.

### FINAL SUGGESTIONS

*Here are some other points to keep in mind when writing abstracts. Read and discuss them.*

- If an abstract is read along with the title, do not repeat or rephrase the title. It will likely be read without the rest of the document, however, so make it complete enough to stand on its own.
- Do not refer in the abstract to information that will not be included in the presentation/article.
- Choose whether to write in first person style (“I” or “We”) or third person style (“This dissertation shows...”). If you prefer first person style, however, avoid using “we” unless your work has more than one author. Likewise, avoid beginning each sentence with “I”. In other words, third person style is always preferable.
- Do not overuse passives. “The study tested” is better than “It was tested by the study”.
- If possible avoid trade names, acronyms, abbreviations, or symbols. You would need to explain them, and that takes too much room.

- Abstracts must contain key words about what is essential in the presentation/article. Key words are used to classify abstracts in databases. Effective key words allow researchers to search for your publication easily. For published work, this may result in someone citing your article.
- Be coherent (logical) and cohesive (connect your ideas).

**Think about some research you have done recently. Write:**

- One or two sentences which provide the key background to the research
- A sentence which states your research question
- A sentence which presents your hypothesis
- Two or three sentences outlining the main methods used
- One or two sentences presenting the key results
- A sentence which states the key implication of your findings

## The Paradox of Value

<https://ed.ted.com/lessons/the-paradox-of-value-akshita-agarwal#watch>

1) *How do we determine the value of things?*

2) *Try to explain these terms. Listen and check.*

a) Exchange value .....

b) Opportunity cost .....

c) Utility .....

d) Marginal utility .....

e) Diminishing marginal utility .....

3) *Multiple choice questions.*

a) You purchased three bars of chocolate. The utility of purchasing the first bar of chocolate is 10 units. The utility of purchasing second bar of chocolate is 8 units. The utility of the third bar of chocolate is 6 units. What is the total value or total utility of purchasing three bars of chocolate?

- A 8 units
- B 18 units
- C 20 units
- D 24 units

b) Using the same scenario as above, what is the total utility of purchasing two bars of chocolate?

- A 8 units
- B 18 units
- C 20 units
- D 24 units

c) Using the same scenario as above, what is the marginal utility of purchasing the second bar of chocolate?

- A 8 units
- B 18 units
- C 20 units
- D 24 units

d) Amy can either eat an apple or an orange. What is the opportunity cost of eating the apple?

- A not eating the orange
- B eating the orange
- C not eating the apple
- D eating the apple

4) *Discussion*

- a) When it comes to most things, the more of it you acquire, the less useful or enjoyable every additional bit becomes. Can you think of a few examples that support this statement?
- b) Is there any situation where the law of diminishing marginal utility may not hold true?
- c) From the concepts of total utility and marginal utility, we understand that an intuitive way to maximize value is to a) vary the way we spend our time and resources, and b) invest in choices to the point they're useful or enjoyable. How do you think we should apply this to real life decisions given that defining value is not as simple as it seems?