



A LETTERS JOURNAL EXPLORING  
THE FRONTIERS OF PHYSICS



# Writing effective abstracts and titles

Anne Ruimy

Publishing Director Journals, EDP Sciences





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### Why is it important to write a good title?

- A good title is a good advertisement for the article
- Search engines and indexing databases

### How to write a good title?

- Clear and precise description of the content
- Papers with shorter titles tend to get more citations. Recommended length < 12 words
- Keep it simple. No abbreviations, jargon and symbols
- Avoid puns, questions
- Avoid articles: the, a

“The computation of interstellar extinction in photoionized nebulae”



- **Declarative title.** States the main findings or conclusions, contains a verb. Rare in physics.  
Heterogeneous investments induced by emotions **promote** cooperation in public goods games
- **Descriptive title.** Describes the subject of the article but do not reveal the main conclusions.  
The influence of a cylindrical cathode on the electro-vortex flow of liquid metal: Numerical simulations and laboratory experiments
- **Other types:**
  - **Two-part title.** Two parts separated by a colon, period or dash. The 2<sup>nd</sup> part can be a precision, the type of study... Avoid 3-part title!
  - **Interrogative.** Takes the form of a question. Avoid.  
Is the public goods game a chaotic system?
  - Titles starting with “**On the...**”. Avoid.  
On the relation between mass of a pion, fundamental physical constants and cosmological parameters



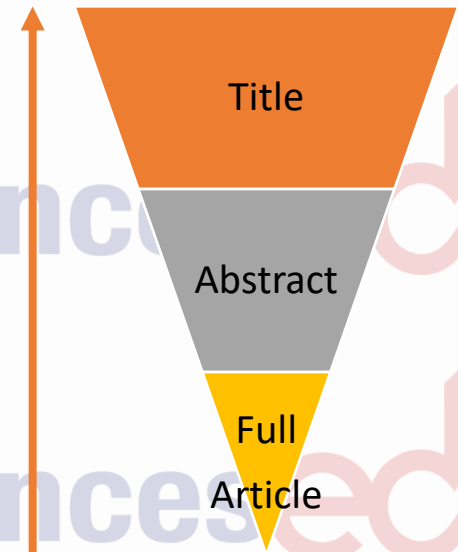
# Why is the abstract important?

## During peer review:

- Abstract predicts the quality of the paper
- Influences the decision of reviewers to review the paper
- Influences the time it takes to complete the review

## After publication:

- Abstracts are freely available in abstracting/indexing databases
- Determines whether a reader downloads and reads the full paper



Visibility, importance





**Structured abstracts:**

- Rare in physics
- Headings (in bold) and paragraph breaks
- Follow instructions for authors
- Check examples of articles published in the chosen journal

**Aims.** A recent major high-angular-resolution imaging survey of 42 large main-belt asteroids ( $D > 100$  km) with VLT/SPHERE has provided shape models of these bodies with an unprecedented accuracy. We ask whether the shapes of these bodies correspond to Maclaurin or Jacobi hydrostatic equilibrium figures.

**Methods.** To address this question, we compared the aspect ratios and rotation rates of these asteroids with Maclaurin or Jacobi equilibrium figures.

**Results.** The rotation rates and polar flattenings of the 42 asteroids globally do not match those of Maclaurin or Jacobi ellipsoids. Moreover, the equatorial axes of the asteroids are not compatible with an axial symmetry as for Maclaurin figures. Only a very few of them could be compatible with a known hydrostatic figure such as Maclaurin, Jacobi, or Clairaut ellipsoids.



### Unstructured abstracts:

- No headings, No paragraph breaks
- The abstract should contain 4 parts:
  - **Background**
  - **materials & methods**
  - **Results**
  - **Conclusion/perspectives**
- To indicate where you are in the structure, use:
  - **transition words** (In this study, here, we show...)
  - **present/past tense** (what is known vs. what you did)
  - **active/passive voice** (what you did vs. what others did)





# Abstract: Background



**...AND...BUT...THEREFORE**

General  
context

**AND**

Specific  
information

**BUT**

Challenge,  
Question

**THEREFORE**

Methods,  
Results

Or juxtapose  
sentences

However,  
although, yet,  
despite...

Hence, thus...  
Here, in this study...

Info that any  
reader will know

Info necessary to  
understand  
challenge/question

What you did to  
address the  
challenge/question





# How to write a good abstract?

The abstract should cover ALL the parts of your paper in balanced proportions

Include terms that people are likely to use when looking for papers

Avoid references and abbreviations

Avoid vague sentences e.g. "the results are compared to the literature"

Use appropriate transition words and tenses

Typically 150-250 words

Focus on ONE result  
Include numerical result and statistical significance

Write the abstract last

Get it language edited by a native speaker



## The role of syntax in the formation of scale-free language networks

The overall structure of a network is determined by its micro features, which are different in both syntactic and non-syntactic networks. However, the fact that most language networks are small-world and scale-free raises the question: does syntax play a role in forming the scale-free feature? To answer this question, we build syntactic networks and co-occurrence networks to compare the generation mechanisms of nodes, and to investigate whether syntactic and non-syntactic factors have distinct roles. The results show that frequency is the foundation of the scale-free feature, while syntax is beneficial to enhance this feature. This research introduces a microscopic approach, which may shed light on the scale-free feature of language networks.

<https://doi.org/10.1209/0295-5075/ac8bf2>

### General

- ✓ Good size – a bit short
- ✓ Transition words
- ✓ All parts included
- ✗ A bit unbalanced

### Background

- ✓ Present tense
- ✓ Gap in knowledge

### Methods

- ✓ Active voice
- ✗ Could use past tense

### Results

- ✗ No numerical result
- ✗ Could use past tense

### Conclusion, Perspectives

- ✓ Present tense (conclusion)
- ✓ Conditional (perspectives)
- ✗ A bit vague

