

# PNPMD Markdown

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## 1 One-Sentence Summary

PNPMD is a specification for human-readable-*first*, plain-text, math-aware, markdown documents.

## 2 Abstract

PNPMD is a specification for human-readable-*first*, plain-text, math-aware documents. PNPMD honors Pandoc's flavored markdown, rendered with pdflatex. Uses Pandoc's crossref filter (giving numbered and referenceable equations, figures, tables, etc), and adds some syntax sugar to ease cross-referencing and citations.

## 3 Keywords

plain-text, research format, markdown, mathjax, pandoc, PNPMD

## 4 Introduction

PNPMD is a specification for human-readable-*first*, plain-text, math-aware, markdown documents.

PNPMD:

- provides a complete Markdown structure for mathematically aware documents, with cross-references and citations,
- keeps the format plain-text and human-readable-*first*, and
- avoids noisy LaTeX wrappers and PDF-only workflows

## 5 (Suggested) Structure

- Header

- One-Sentence Summary
- Abstract
- Keywords
- Other body sections
- About Author(s)
- References

## 5.1 Header

Three lines:

```
% Title
% Author(s)
% Date
```

## 5.2 One-Sentence Summary

One sentence summarizing the paper.

## 5.3 Abstract

3–5 sentences: problem → method → result → significance.

No citations or equations.

## 5.4 Keywords

3–6 topical keywords.

## 5.5 Other Body Sections (Recommended)

Introduction, Theory/Framework, Derivation, Results, Discussion, Conclusion, Future Work, Appendices.

## 5.6 About Author(s)

Immediately before References.

A list of authors, with ORCID if available, email if corresponding, or relevant information.

For example,

- An M. Rodriguez, <https://orcid.org/0009-0009-9098-9468>, an@preferredframe.com
- Max Freet, max@preferredframe.com

## 5.7 References

Use DOI links where possible.

## 6 References and Cross-References

Cross-linking, numbering, and citations are produced automatically by Pandoc with the `pandoc-crossref` filter.

## 7 Cross-Reference System and Sugar Substitutions

When using the **PNPMD rendering script**, several syntactic sugars are automatically expanded to Pandoc-compatible links:

- `{#id} → []{#id}`: For plain prose anchors (no colon).
- `@id → [label](#id)`: If a `[label]{#id}` exists
  - `@id → [@id](#id)`: otherwise
- `[label](@id) → [label](#id)`: Always.
- `[label](@sec:id) → [label](#sec:id)`: Always.
- `@sec:, @fig:, @eq:, @tbl: → (unchanged)`: Handled by `pandoc-crossref`.
- bare `#id → [](#id)`: When not inside code blocks, headings, or existing links.

Colon-prefixed anchors (e.g., `{#eq:wave}`) are reserved for cross-reference numbering and remain untouched.

## 8 Formatting Rules

### 8.1 Math

- Inline math: `$...$` (e.g., `$E = mc^2$`)
- Display math:

```
$$  
F_{\mu\nu} = \partial_\mu A_\nu - \partial_\nu A_\mu  
$$ {#eq:sampleeq}
```

renders as:

$$F_{\mu\nu} = \partial_\mu A_\nu - \partial_\nu A_\mu \tag{1}$$

And can be referenced as `@eq:sampleeq`, like so:

See eq. 1

- MUST NOT use `\[ ... \]` or `\( ... \)` for latex. ONLY USE .. and ..  
for latex quoting.
- Specify units whenever possible.

## 8.2 Characters

- UTF-8 required (pdflatex-compatible)
- Unicode symbols allowed only if supported by pdfLaTeX input; otherwise prefer `$...$` or ASCII

## 8.3 Text Emphasis

Avoid bold/italics/underline unless essential.

Clarity is primary. Don't pollute the document with unnecessary visual noise.

## 8.4 Section Separation

- Separate sections with two blank lines
- Never use --- (horizontal rules) to separate sections
- Do **not** number sections manually; Pandoc handles numbering automatically

# 9 Conclusion

PNPMD is a plain-text specification for mathematically aware documents.

It standardizes minimal syntax, automatic cross-referencing, and deterministic conversion through Pandoc with `pandoc-crossref`.

The format remains simple, portable, and human-readable.

PNPMD: where notation and meaning remain human before machine.

# 10 Current version

1.0.5

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