The PNP Markdown Standard – PNPMD v1.001

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Abstract

We define the PNP Plain Text Standard v1.001 (PNPMD v1.001). It is based on mathematically aware Markdown using `$...$` and `$$...$$` LaTeX equation blocks. The format eases compatibility with naive use of rendering engines that convert `.md` to various targets (`.pdf`, `.html`, etc.).

One-Sentence Summary

PNPMD v1.001 is a minimal, human-readable *first*, mathematically aware, plain-text, Markdown standard for documents.

Keywords

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

Introduction

The PNPMD v1.001 format provides a minimal yet complete Markdown structure for mathematically aware documents. The format allows for naive use of tools like `pandoc` that render `.md` directly to PDF or HTML. It keeps the format simple and human-readable *first*: a straight ASCII-text document. It avoids relying on human-unreadable, unnecessary, or noisy LaTeX wrappers and PDF-only workflows. Our goals are reproducibility, portability, and unambiguous interpretation. It is also well-suited to version-controlled repositories.

In summary:

- human-readable *first*
- clear, simple, LaTeX, math-aware text
- ASCII art
- even tikki figures

Structure

In summary,

- Header
- Abstract
- One-Sentence Summary
- Keywords
- Other body sections
- Corresponding Author
- References

In more detail,

- **Header**

First three lines:

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

- **Abstract**

3–5 sentences: problem → method → result → significance. Avoid citations or equations here.

- **One-Sentence Summary**

Single self-contained sentence summarizing the paper.

- **Keywords**

3–6 topical keywords.

- **Other Body Sections**

Recommendeded sections:

- Introduction — motivation, novelty, context.
- Theory / Framework — fundamental definitions and starting equations from first principles.
- Derivation — detailed steps, explicit approximations with justification.
- Results — final closed-form laws, constants, predictions; include numerical evaluations with units.
- Discussion — interpretation, implications, and limits.
- Conclusion — concise recap of contributions, assumptions, and scope.
- Next Work — proposed future directions.
- Appendices — supplementary derivations, datasets, or proofs.

6. **Corresponding Author**

- Immediately before References:

7. **References**

- Use DOI links where possible.

- Avoid footnote-style citations; inline references are sufficient.

Formatting Rules

Math:

- Inline math: `$...$` Example: $E = mc^2$
- Display math blocks: `$$...$$`

Example:

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

- **DO NOT USE** `\[...\]` and `\(...\)` either for inline or block math
- Always specify units. SI units preferred

Example: $R = 5.29177210903 \times 10^{-11}\,\mathrm{m}$

Characters:

- UTF-8 encoding required.
- Although some Greek, math symbols, and Unicode arrows (→, ←) are allowed **only if** they are supported by the default `utf8` inputenc mapping in pdfLaTeX, ... is preferred.
- Any unmapped Unicode symbols must be replaced either by ... or their ascii counterpart.
- No inline math math format other that ... OR

...

.
- No math in abstract or metadata.

Text emphasis:

- Avoid bold, italics, and underlines unless essential for meaning.
- Decorative emphasis is not permitted.

Section separation:

- Separate sections with two blank lines (`\n\n`).
- Never use `---` (horizontal rules) to separate sections.

Figures:

- Optional; ASCII diagrams if needed. Example:

```
 Core
(  o  )
 \    /
  \_/
```

Example Section

Theory Let $U : \mathbb{R}^3 \times \mathbb{R} \to \mathbb{R}$ be the scalar energy field. The field strength is defined:

$$F = d(*dU)$$

Source-free dynamics satisfy:

$$dF = 0, \quad d\star F = 0$$

Energy density and Poynting vector:

$$u = \frac{\varepsilon_0}{2}(E^2 + c^2 B^2), \quad \mathbf{S} = \frac{1}{\mu_0}\mathbf{E} \times \mathbf{B}$$

Results For TE_{11} mode geometry:

$$\alpha = \frac{\kappa}{2\pi^2 R} \cdot \frac{e^2}{\varepsilon_0}$$

Numerical value: $\alpha \approx 6.41\,\mathrm{eV}$.

Conclusion

PNPMD v1.001 is a plain-text specification for mathematically aware documents.

Next Work

A PNPMD v2 could extend this with optional metadata fields for ORCID, funding, and cross-references between related preprints.

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References

1. Palma, A., Rodríguez, A. M., & Freet, M. (2025). Point–Not–Point: Deriving Maxwell Electrodynamics from a Scalar Energy Field and Explaining Particle–Wave Duality. DOI:10.13140/RG.2.2.16877.91368