Paper 032 / Application 009

ResearchPack: A Reproducible PDF, LaTeX, Artifact, and Errata Pipeline for research.jmp0x1b.com

Publishing papers as auditable software supply chains

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Abstract

ResearchPack is a publication pipeline for research.jmp0x1b.com. It treats every paper as a bundle: LaTeX source, PDF build, figures, code, data, build logs, provenance, errata, and revision history. The pipeline is designed for speculative, negative, and engineering papers where auditability matters as much as presentation.

Status. Draft manuscript for review and revision. This paper is not an empirical claim of new physics or field-ready technology. It is a structured proposal, theory note, protocol, or application architecture intended to be auditable, falsifiable, and publishable with source.

Contents

1 Problem

A PDF alone cannot carry enough evidence for technical review. Conversely, raw repositories without a stable manuscript surface are hard to cite. The problem is to publish papers as stable documents backed by rebuildable artifacts and revision-controlled errata.

2 Model

Each paper has a manifest, source tree, build recipe, artifact digests, PDF, optional data/code, review state, and errata log. The web index links PDF and TeX, while the manifest maps claims to supporting artifacts.

$$\text{PaperBundle} = \{\text{tex}, \text{pdf}, \text{figures}, \text{code}, \text{data}, \text{manifest}, \text{errata}\}.$$

$$\text{RebuildOK} \Rightarrow H(\text{pdf}_{\text{rebuilt}}) = H(\text{pdf}_{\text{published}}) \text{ or documented drift.}$$

3 Claims

1. **Claim 1.** Every JMP0X1B paper should publish source next to the reader-facing PDF.
2. **Claim 2.** Claim-to-artifact mapping makes review faster and errata more precise.
3. **Claim 3.** Negative results need the same publication dignity and artifact structure as positive results.
4. **Claim 4.** A reproducible paper pipeline is also a trust signal for future technology applications.

4 Evidence Plan

A prototype should rebuild the existing paper style on a small corpus and verify that PDFs, TeX files, and manifests stay synchronized. A second test creates an erratum and demonstrates traceable supersession without deleting the original paper.

5 JMP0X1B Implementation Surface

JMP0X1B can define the manifest schema, digest verification, build steps, and web-index generation. The package should integrate with provenance and document-control libraries.

Illustrative JMP0X1B-style contract

```
record PaperBundle { id: Text, tex: Digest, pdf: Digest, artifacts: List<Digest>, errata: List<
fn publish(bundle: PaperBundle) -> PublishReceipt effects{Build, Provenance, DocControl, Audit]
```

6 Release And Review Plan

Release a manifest specification, example bundle, build script, web index generator, and validation report for this paper pack.

7 Open Questions

- Should the site require deterministic PDF hashes?
- How should large raw data be linked without bloating paper bundles?
- What errata severity levels are needed?
- Can reviewer comments be preserved privately while public errata stay concise?

8 Conclusion

ResearchPack makes the publication site itself part of the research infrastructure. It turns papers into auditable supply chains.

References

References

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