

**Title:** Optimizing Print Preservation of Research Journals

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**Abstract:**

Academic libraries are reducing their holdings of print journals as more of this material becomes available electronically, but librarians, researchers and other users of this material, such as firms offering journal archives in electronic form, are concerned that some copies remain available. Providers of electronic journal archives are especially concerned about preservation of "clean" copies that retain full information accuracy from the vantage point of the researcher so they will be able to rescan the material as new generations of scanning technology become available.

We describe our experience and findings from an applied research project whose aim was to provide guidelines and insight to decision-makers in this context. As a prelude, we report briefly on statistical analysis of "defects" in the pages of 25 different journals for their entire publication history. This provides a backdrop and motivation for our approach to the problem. We then present models for two storage protocols, both of which have the goal of minimizing the cost of ensuring, with a high probability, survival of at least one copy for a specified time horizon. The talk concludes with a discussion of the implications of this study not only for research journals, but also for other documents available only in print form, and for archives of digital documents. We also discuss other potential application domains.

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