

**CODEN IJMTAW  
VOLUME 27  
NUMBER 1**

**PAGES 1-171  
SPRING 1983  
ISSUE 106**

**ILLINOIS  
JOURNAL  
OF  
MATHEMATICS**

.....  
*a quarterly journal published by the*  
**UNIVERSITY OF ILLINOIS  
AT URBANA-CHAMPAIGN**

.....  
*edited by*  
**LOUIS AUSLANDER  
KUO-TSAI CHEN  
MAHLON M. DAY  
FRANK B. KNIGHT  
IRVING REINER  
HAROLD M. STARK  
KAREN UHLENBECK**

# ILLINOIS JOURNAL OF MATHEMATICS

## Manuscript

Original research papers in pure and applied mathematics intended for publication in this journal may be written in English, French or German. They should be addressed to the Illinois Journal of Mathematics, 1409 West Green Street, University of Illinois at Urbana-Champaign, Illinois 61801, or one of the editors:

LOUIS AUSLANDER, Department of Mathematics, Graduate School and University Center, 33 West 42nd Street, City University of New York, New York, N.Y. 10036.

KUO-TSAI CHEN, Department of Mathematics, 1409 West Green Street, University of Illinois at Urbana-Champaign, Illinois 61801.

MAHLON M. DAY (Managing Editor), Department of Mathematics, 1409 West Green Street, University of Illinois at Urbana-Champaign, Urbana, Illinois 61801.

FRANK B. KNIGHT, Department of Mathematics, 1409 West Green Street, University of Illinois at Urbana-Champaign, Urbana, Illinois 61801.

IRVING REINER, Department of Mathematics, 1409 West Green Street, University of Illinois at Urbana-Champaign, Urbana, Illinois 61801.

HAROLD M. STARK, Department of Mathematics C-012, University of California at San Diego, La Jolla, California 92093.

KAREN UHLENBECK, Department of Mathematics, Box 4348, University of Illinois at Chicago Circle, Chicago, Illinois 60680.

All papers should be typewritten, double-spaced, and the author should keep a complete copy. Bibliography and footnotes should be typed, double-spaced, on separate sheets of paper. Figures should be drawn separately in black ink on white paper suitable for being photographed.

## Proof

Authors will receive only galley proof. Proof sent to North American addresses will be accompanied by manuscript and sent by first class mail. To other addresses, proof will be sent by airmail, and manuscript will be sent only if requested. Authors are asked to return proof (and manuscript if sent) by the same class of mail that was used in sending it to them.

## Page charges

To cover a part of the cost of production, the author's institution will be billed for \$40 per page.

## Reprints

One hundred free reprints are supplied to the sole author of a paper: fifty free reprints are supplied to each author of a joint paper. Additional reprints may be purchased.

The ILLINOIS JOURNAL OF MATHEMATICS (ISSN 0019-2089) is published quarterly by the University of Illinois Press. Entered as second-class matter June 4, 1957 at the post office at Urbana, Illinois, under the act of August 24, 1912. Office of publication, University of Illinois Press, 54 E. Gregory Drive. Box 5081, Station A, Champaign, Illinois 61920.