

**PACKAGE ID** - 000211SUN0000 DOE-MACSYMA

**KWIC TITLE** - Computer Algebra System

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**LIMITATION CODE** -UNL                   **AUDIENCE CODE** - UNL

**COMPLETION DATE** - 09/01/1987   **PUBLICATION DATE** - 09/01/1987

**DESCRIPTION** - DOE-MACSYMA (Project MAC's SYmbolic MANipulation system) is a large computer programming system written in LISP. With DOE-MACSYMA the user can differentiate, integrate, take limits, solve systems of linear or polynomial equations, factor polynomials, expand functions in Laurent or Taylor series, solve differential equations (using direct or transform methods), compute Poisson series, plot curves, and manipulate matrices and tensors. A language similar to ALGOL-60 permits users to write their own programs for transforming symbolic expressions. Franz Lisp OPUS 38 provides the environment for the Encore, Celerity, and DEC VAX11 UNIX, SUN(OPUS) versions under UNIX and the Alliant version under Concentrix. Kyoto Common Lisp (KCL) provides the environment for the SUN(KCL), Convex, and IBM PC under UNIX and Data General under AOS/VS.

**PACKAGE CONTENTS** - Media Directory; NESC Note; Software Abstract; KYOTO Common Lisp License Agreement; Note From George Fann; Reference Manual Version 10, Vols. I and II;

**SOURCE CODE INCLUDED?** - No

**MEDIA QUANTITY** - 1 CD Rom

**COMPUTER** - SUN

**OPERATING SYSTEMS** - Berkeley UNIX 4.2

**PROGRAMMING LANGUAGES** - Franz Lisp OPUS 38

**SOURCE CODE AVAILABLE (Y/N)** - N

**OTHER PROG/OPER SYS INFO** - The SUN(KCL) version is designed for a Kyoto Common Lisp environment with UNIX or AOS/VS operating system, such as the Data General MV10000. Each recipient is required to complete and return the Kyoto University SIGLISP License Agreement.

**REFERENCES** - The Mathlab Group, MIT Laboratory for Computer Science, MACSYMA Reference Manual, Version Ten, Volumes I and II, First Printing, January 1983\ V. Ellen Golden and The Mathlab Group, MIT Laboratory for Computer Science, Introductory MACSYMA Documentation: A Collection of Papers, September 1982; Glenn S. Burke, George J. Carrette, and Christopher R. Eliot, NIL Reference

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**REFERENCES - (CONT)** Manual, MIT/LCS/TR-311, January 1984; Glenn Burke, Introduction to NIL, MIT Laboratory for Computer Science, March 1983; Glenn S. Burke and Lowell B. Hawkinson, Pretty Printing in VAX NIL, MIT Laboratory for Computer Science, draft, June 17, 1983; Glenn S. Burke, Letter to the System Manager, MIT Laboratory for Computer Science, April 17, 1984; Glenn S. Burke, Letter to the NIL User, MIT Laboratory for Computer Science, April 13, 1984; Glenn Burke, LSB Manual, MIT/LCS/TM-200, June 1981; A Common-Lisp syntax summary, Common Lisp Reader Syntax, MIT/LCS document, received June 18, 1984; DOE-MACSYMA, NESC No. 9847.MPL2, Implementation Information for the Sun Microsystems SUN(OPUS) and DEC VAX11 UNIX Version of DOE-MACSYMA Release 8.23, National Energy Software Center Note 88-11, November 25, 1987; DOE-MACSYMA, NESC No. S9847.MPL3B, Implementation Information and Transmittal Cartridge Directory for Edition B of the SUN(KCL), Symbolics3600, TI Explorer Version of DOE-MACSYMA Release 8.14, National Energy Software Center Note 91-21, November 28, 1990.

**ABSTRACT STATUS** - Abstract first distributed June 1984. Symbolics3600 version submitted March 1985, replaced July 1985, replaced by Edition B December 1985, replaced by Edition C July 1986, replaced by Edition D May 1987, replaced by Edition E August 1987, replaced by SUN(KCL), Symbolics3600, TI Explorer version December 1987. TI Explorer version submitted August 1985, replaced by Edition B December 1985, replaced by SUN(KCL), Symbolics3600, TI Explorer version December 1987. Celerity version submitted July 1987. DEC VAX11, SUN(OPUS) UNIX version submitted September 1987. SUN(KCL), Symbolics3600, TI Explorer version submitted September 1987, replaced by Edition B November 1990.

**SUBJECT CLASS CODE** - P

**KEYWORDS** -

COMPUTER PROGRAM DOCUMENTATION  
D CODES  
NUMERICAL ANALYSIS  
FUNCTIONS  
MATHEMATICAL MODELS  
ALGEBRA  
LISP  
DIFFERENTIAL CALCULUS  
ANALYTICAL SOLUTION  
SERIES EXPANSION  
MATRICES

**EDB SUBJECT CATEGORIES** -  
990200

**SPONSOR** - DOE/ER

**PACKAGE TYPE** - SCREENED