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10/31/1988

Dr. David Hough SUN Microsystems 2550 Garcia Avenue Mountain View, CA 94043 MS 12-40 USA

## Dear David:

I am writing to confirm the receipt of the PAL video tape of my lecture. We checked it last week and it looks fine. Thank you very much! We had a very successful conference again the first week in October with a user's meeting of PASCAL-SC, FORTRAN-SC, ACRITH and ARITH-MOS on the last day.

IBM has extended their system family ES/9370 by three additional models 30, 50 and 80. All support the ACRITH OP-Codes by hardware. These instructions are now provided by a new chip. Compared with former microcode solutions this allows an easier transfer to other models.

SIEMENS has just announced 8 new models ranging between 2 and 40 MIPS. They also provide the ACRITH OP-Codes by hardware. The same does Hitachi's successor model of their S5 series. I do not know the corresponding NAS number.

All these companies provide an optimal dot product beyond extended precision. The hardware support even speeds up the system compared with a software accumulation in extended precision.

I enclose copies of some brochures for your convenience.

With best regards

Yours

Ulrich Kulisch

# PASCAL-SC for the ATARI ST

A PASCAL Extension for Scientific Computation information Manual and Floppy Disks

Dr. Ulrich Allendörfer, Dr. Harald Böhlm, Dr. Gerd Bohlend Dr. Kurt Grüner, Prof. Dr. Edgar Kaucher, Dr. Reinhard Kirchner, Dr. Rudi Klatle, Prof. Dr. Ulrich Kullsch, Dr. Michael Neaga, Prof. Dr. Louis B. Rall. Dr. Siegfried M. Rump, Ralf Saler, Lloba Schindele, Prof. Dr. Christian Ullrich, Prof. Dr. Hans Wilm-Wippermann, Dr. Jürgen Wolli

1987. X, 179 pages and two floppy disks for the ATARI ST ISBN 3-519-02108-0 book/disk pack DM 198. von Gudenberg

(PASCAL for Scientific Computation) is the result of a lon term effort by a team of scientists to produce a powerful tool for solving scientific problems. Due to its properties PASCAL-SC is also an excellent educational system. The new extended PASCAL system called PASCAL-SC highlights of the system are:

PASCAL-SC contains ordinary PASCAL powerful language extensions like functions with arbitrary result type and user defined operators

the screen-oriented editor checks the syntax interactive decimal floating-point arithmetic and packages providir optimal arithmetic for many higher data types such as complex numbers and intervals as well as correspondir

PASCAL-SC demonstration package application packages solving linear systems, computing epplication packages solving linear systems, computing elegenvectors and evaluating zeros of polynomials and rational expressions access to all GEMDOS, BIOS and XBIOS functions as vectors and matrices

This manual describes the complete PASCAL-SC system and its implementation and use on the ATARI ST (operating system GEM/TOS). Two included floppy disks put the whole system at the user's disposal. linking of assembler or C routines

well as AES and VDI roulines

U. Kulisch and H.J. Stetter (eds.)

# Scientific Computation with Automatic Result Verification

(Computing, Supplementum 6)

1988. 22 figures. Approx. 240 pages. Soft cover approx. DM 120, --, approx. öS 840, --Reduced price for subscribers to "Computing": Soft cover approx. DM 108, --, approx. öS 756, --ISBN 3-211-82063-9

Contents: U. Kulisch, H.J. Stetter: Automatic result verification Numerical methods with result verification: J. Schröder: A method for producing verified results for two-point boundary value problems - J. Weissinger: A kind of difference method for enclosing solutions of ordinary linear boundary value problems -Ch. Jansson: A self-validating method for solving linear programming problems with interval input data - G. Mayer: Enclosing the solutions of linear equations by interval iterative processes -G. Alefeld: Error bounds for quadratic systems of nonlinear equations using the precise scalar product - H. Behnke: Inclusion of eigenvalues of general eigenvalue problems of matrices - M. Ohsmann: Verified inclusion for eigenvalues of certain difference and differential equations - Applications in the technical sciences: A. Ams, W. Klein: Verified inclusions of critical bending vibrations - D. Cordes: Stability test for periodic differential equations on digital computers with applications - E. Adams, A. Holzmüller, D. Straub: The periodic solutions of the oregonator and verification of results - Th. Ottmann, G. Thiemt, Ch. Ullrich: On arithmetical problems of geometric algorithms in the plane -Improving the tools: R. Lohner: Precise evaluation of polynomials in several variables - H.C. Fischer, G. Schumacher, R. Haggenmüller: Evaluation of arithmetic expressions with guaranteed high accuracy - K. Braune: Standard functions for real and complex point and interval arguments with dynamic accuracy - W. Krämer: Inverse standard functions for real and complex point and interval arguments with dynamic accuracy - H.J. Stetter: Inclusion algorithms with functions as data - Appendix: J.H. Bleher, S.M. Rump, U. Kulisch, M. Metzger, Ch. Ullrich, W. Walter: FORTRAN-SC. A study of a FORTRAN extension for engineering/scientific computation with access to ACRITH