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## MANUAL FOR COMMUTE, A FORTRAN PROGRAM FOR SYMBOLIC EVALUATION OF COMMUTATORS AND CORRELATION FUNCTIONS

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### PROGRAM SUMMARY

*Title of program:* COMMUTE

*No. of magnetic tapes required:* none

*Catalogue number:* ACKS

*Other peripherals used:* DISK

*Computer:* IBM 3033, IBM 370/168, PDP 11/45, VAX 11/780

*No. of cards in combined program and test deck:* 5219

*Operating system:* OS/MVS/, RSX-11/D, VAX/VMS V2.1

*Keywords:* many body theory, equations of motion, correlation functions, symbolic evaluation

*Programming language used:* FORTRAN IVH EXTENDED, FORTRAN IV PLUS

*Nature of the physical problem*

COMMUTE is a FORTRAN program that can be used for the symbolic evaluation of equations of motion of operators or correlation functions. It can use symmetry operations to reduce the final number of terms and in some specific cases, it expresses correlation functions in terms of known functions. It is extremely useful for the calculation of the coefficients in the short-time expansion of a correlation function.

*High speed storage required:* 300 K (IBM), 32 K (PDP, VAX)

*No. of bits in a word:* 32 (IBM, VAX), 16 (PDP)

*Overlay structure:* no (IBM, VAX) yes (PDP)

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