

Conclusions

The development, method of use, and the analogue set-up to derive the maximum usefulness from the PACE scaling routine for Mercury have been outlined. The authors are aware that they could have gone farther in the development of this routine, to take into account further complications of non-linear equations. Experience has shown that the present routine can fulfil most of our requirements if the potentialities are kept in mind when preparing the analogue set-up.

Consideration has been given to the preparation of a routine which would give, as output data, a full list of patch connections, check voltages, etc., that would virtually eliminate conventional analogue programming

methods. This could be done given the time and a digital computer of sufficient size. Since the main field of analogue computation is in problems where further insight into the problem is of importance, much of this would be lost if the preparation of the associated analogue circuits were not undertaken by the human analogue computer programmer, who has also an interest in the results.

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Appendix—Specification of PACE scaling Routine

Data Tape

1. Blank tape.
2. A case subtitle (optional), which must not contain * or →.
3. *
4. Equations defining all symbolic constants used, e.g. $MCA = 135 \cdot 83$.
5. Statement of all variables which appear in the equations to follow, together with information regarding their range.
 Either (a) TS 20 1000
 or (b) TS 400 373 20
 Meaning:
 (a) $|TS1| < 1000$, 20 is the I.C. for "static check."
 (b) $|TS1-373| < 20$, 400 is the I.C. for "static check."
6. Equations for derivatives.
7. /

Notes

A symbol consists of 1, 2, or 3 letters followed by an integer n , $0 \leq n \leq 30$. £ stands for d/dt ; thus £ TS1

stands for d/dt (TS1). It may not appear except before the last symbol on the L.H.S. of the equation.

A simple product of constant or symbolic constants may be used on the L.H.S. =, +, -, /, () have their usual algebraic meanings; * may be used as a multiplication sign, but may be omitted between a figure followed by a letter, or where a bracket is involved.

Normal operating instructions are followed in the running of the program on Mercury. The binary program tape is fed into the machine (preceded by sectors 2-5 of PIG if not already in) and key 9 is depressed to cause the data to be read. Keys 0 and 1 must be set to satisfy the requirements of Quicky 25.

Output

- (1) Equations are printed defining new (starred) variables in terms of the original variables: there-after the asterisks are dropped.
- (2) The scaled equations are then printed. If any coefficient exceeds ten in absolute value, three asterisks are printed. v stands for the 100 volt reference.
- (3) In each case, the appropriate test voltage is given.

Midsummer International Conferences

France

A Colloquium on Modern Computing Techniques will be held in Paris from 28 May to 1 June 1962. It is being organised jointly by AFRA, AICA and AFCALTI. Further information may be obtained from

Monsieur P. Decaulne,
 L'Association Française de Regulation et d'Automatisme,
 19 Rue Blanche,
 Paris, IX,
 France.
 (Telephone No. TRInité 66-36.)

U.S.A.

The National Machine Accountants Association announce that their 1962 International Data Processing Conference and Business Exposition will be held from 19 to 22 June 1962 in New York City. Further particulars may be obtained from

Mr. John J. Wilk,
 International Vice President 1962 Conference,
 National Machine Accountants Association,
 507 Fifth Avenue,
 New York, 17,
 N.Y., U.S.A.
 (Telephone No. LL. 1-6767.)