SUBROUTINE PS (L, N, R, LPI)

INTEGER R, RO, RANG1, RANG2, P, Q, Q1

REAL L(6,7), LT(7,6), LPI(7,6), A(6,6), B(6,6), IM(6,6), IMT(6,6), C(6,6), U(6,6), UT(6,6), D(6,6), API(6,6), C1(6,6)

IF (N-R) 2,2,1

1. M=R

CALL TRAM(L, LT, N, M)

CALL PROMAT(L, LT, A, M, N, M)

GO TO 3

1. M=N

CALL TRAM(L, LT, M, R)

CALL PROMAT(L, LT, A, M, R, M)

1. DO 4 I=1,M

DO 4 J=1,M

1. B(I,J)=A(I,J)

CALL DIAG (B, IM, M, RANG1, I11, I12)

IF (RANG1-M) 6, 5, 6

1. CALL TRAM(IM,IMT,M,M)

CALL PROMAT(IMT, IM, API, M, M, M)

GO TO 50

1. DO 7 I=1,M

DO 7 J=1,M

IF (I-J) 9, 8, 9

1. IF (B(I,I)-1) 11,10,11
2. U(I,J)=1

GO TO 7

1. U(I,J)=0.
2. IF (B(I,I)-1) 12,11,12
3. U(I,J)=-IM(I,J)
4. CONTINUE

CALL TRAM (U, UT, M, M)

CALL PROMAT (UT, A, C1, M, M, M)

CALL PROMAT (C1, U, C, M, M, M)

RO=1

22 P=0

DO 14 I=I11,I12

IF (B(I,I)-1) 14,15,14

15 P=P+1

Q=1

DO 144 J=I11,I12

IF (B(J,J)-1) 144,16,144

16 IF (RO-1) 17, 18, 17

17 C(I,J)=D(P,Q)

GO TO 19

18 D(P,Q)=C(I,J)

1. Q=Q+1

144 CONTINUE

14 CONTINUE

IF (RO-1) 21, 20, 21

1. Q1=Q-1

CALL DIAG (D, IM, P, RANG2, I21,I22)

CALL TRAM (IM, IMT, P,P)

CALL PROMAT (IMT, IM, D, P,P, P)

RO=2

GO TO 22

1. CALL PROMAT (U,C,C1, M,M,M)

CALL PROMAT (C1, UT, API, M,M, M)

1. IF (M-N) 23,24,23

23 CALL PROMAT (API, LT, LPI, M, M, N)

GO TO 25

24 CALL PROMAT (LT, API, LPI, R, M, M)

25 RETURN

END