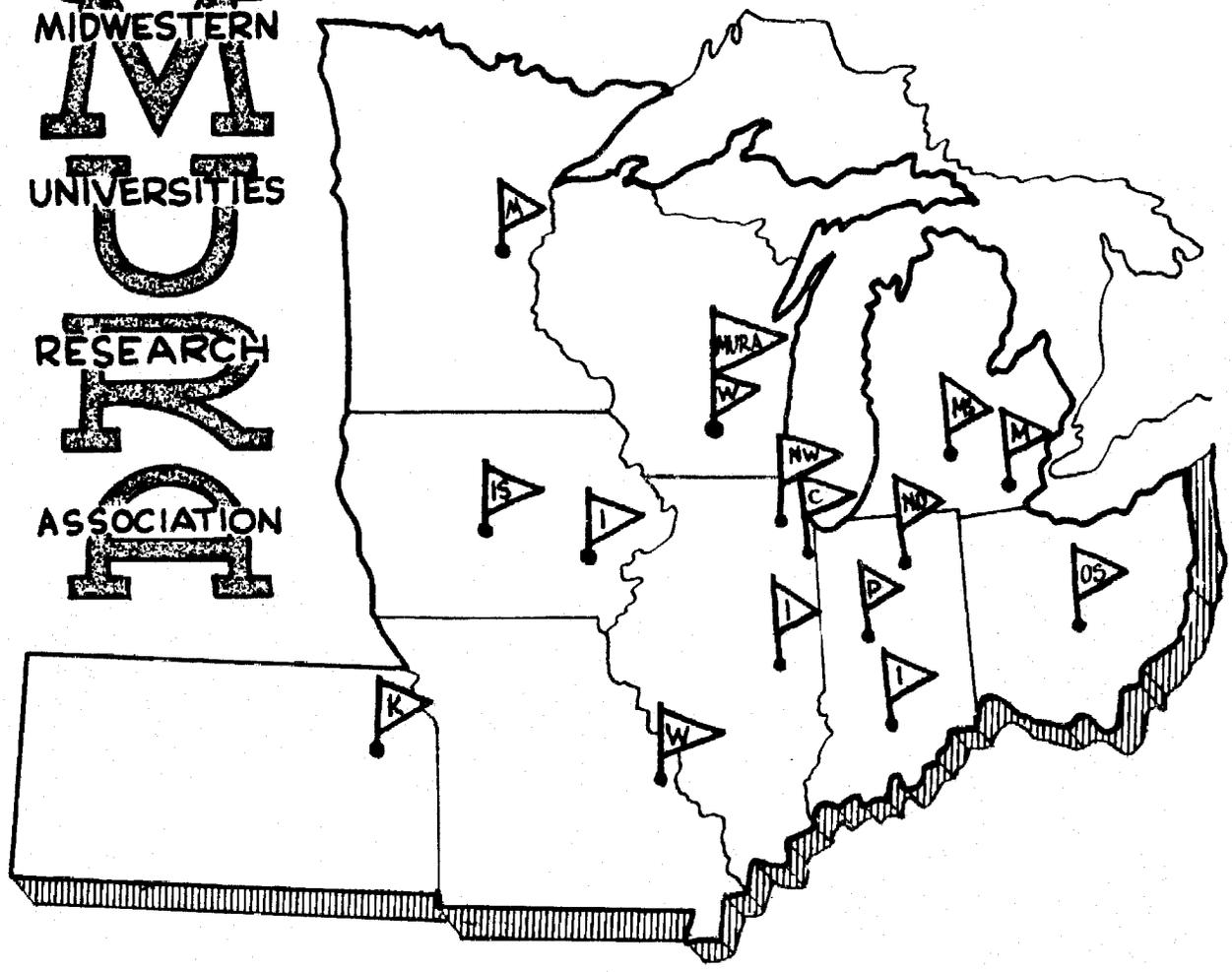




0 1160 0038619 7

MIDWESTERN  
**M**  
UNIVERSITIES  
**U**  
RESEARCH  
**R**  
ASSOCIATION  
**A**



**REPORT**

SIXTEEN MESH  
(Program 56)  
February-March, 1957

**NUMBER**

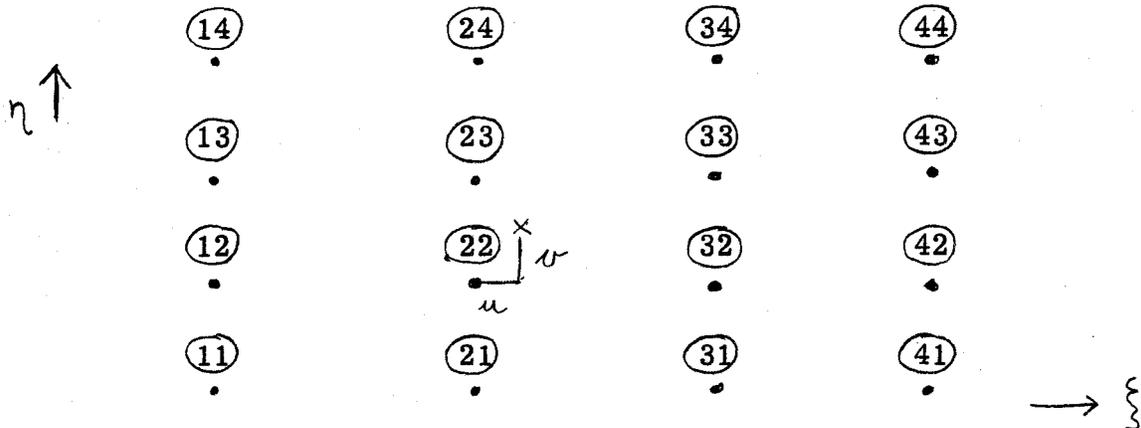
232

Internal  
(IBM Program)

SIXTEEN MESH (Program 56)

J. N. Snyder

A program identical to FORMESH (Program 26) except a 16-point interpolation formula is used.



$$h = -\frac{u(1-u)(2-u)}{6} \textcircled{1} + \frac{(1-u)(1+u)(2-u)}{2} \textcircled{2} \\ + \frac{u(1+u)(2-u)}{2} \textcircled{3} - \frac{u(1-u)(1+u)}{6} \textcircled{4}$$

where

$$\textcircled{i} = -\frac{v(1-v)(2-v)}{6} \textcircled{i1} + \frac{(1-v)(1+v)(2-v)}{2} \textcircled{i2} \\ + \frac{v(1+v)(2-v)}{2} \textcircled{i3} - \frac{v(1-v)(1+v)}{6} \textcircled{i4}$$

Circled numbers here stand for the field values at the 16 points. The same rule is used on all 3 field components.

The quantity  $\eta$  is regarded as having overflowed if

$$\eta \geq (b-2)l$$

where  $b$  is the total number of rows in the mesh and  $l$  is the vertical mesh size.

SIXTEEN MESH AGENDUM (PROGRAM 56)

EMPLOYS FIELDS FROM FOROCYL NO.	
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PARA-METER	ADDRESS	VALUE	REMARKS	
I. D.	7597			↑ Integers ↓
$N_e$	7598			
$N_p$	7599			
$n_{RK}$	7600			
m	7687		Needed only if $N \equiv 0$	
$(C_p)_0$	7580		(0)	
$b_{PHONY}$	7626			↑ Fractions ↓
$P_{x_0}$	7591			
$P_{y_0}$	7592			
$x_0$	7593			
$y_0$	7594			
$(N\theta/2\pi)_0$	7580		(0)	
$x_{max}$	7595		(1/2)	
$P_{x_{max}} = P_{y_{max}}$	7596		$(1 \times 2^{-6})$ (Scale by $2^{-6}$ )	
$2^{mh}$	7624		Needed only if $N \equiv 0$	
HUMAN ID	7601			

"SEARCH" (Stop after first run that is stable through $N_e$ steps) SS6 Up.	
Is this the first of a series of runs?	
Is this a subsequent run in a series, referring to previous agenda?	

**NOTES:**

1. To omit any of the above parameters, simply leave its line blank.
2. The values given above in the remarks column are those which are entered if nothing is specified for them. Consequently, parameters having those values need not be entered by the data card. However, if some other value is desired, merely indicate it in its place.
3. A parameter once changed remains so in a series of runs, except that  $(C_p)_0$  and  $(N\theta/2\pi)_0$  if set different from 0 must be so reset on each such run.
4. To submit a series of problems which differ only slightly, indicate "series" in the above box, and fill out one of these sheets for each separate problem. In this case it is not necessary to enter values other than those which differ from the preceding problem. Please staple the whole series securely together to form one entity.
5. If a series forms a "search" in the sense that the series is to be stopped after the first run which is stable through  $N_e$  steps, please check the box above, otherwise write nothing.
3. A box is provided for the mesh number.