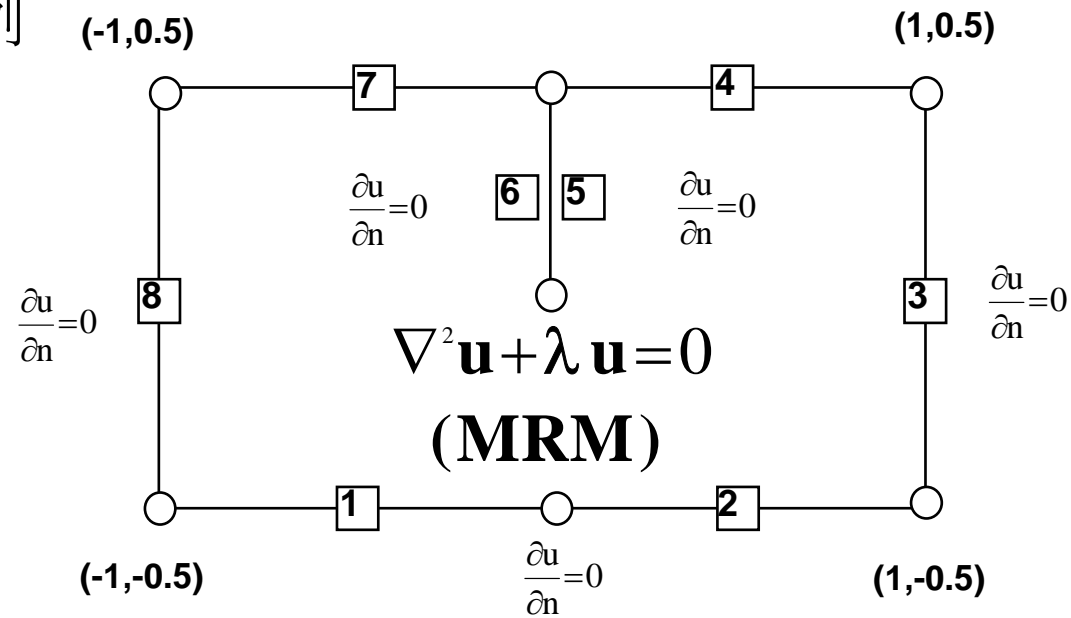


DUALMRM 程式使用說明

1. 適用範圍：

- (1) 可分析剛性邊界聲場之聲頻與聲模，聲場內可含極薄厚度之隔板

2. 算例



DUALMRM 程式 EASY MANUAL

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(dualmrm.ppt)

3.使用步驟：

(1) 輸入Neumann邊界條件(t)於 f 02.dat,其格式如下:

<u>element</u>	<u>boundary data (t)</u>
1	0
2	0
3	0

(2) 輸入邊界條件(t,u)於 f 03.dat, 格式如下：

<u>boundary data</u>
0
0
0

(3) 建立節點坐標與元素編號於 f 15.dat,格式如下:

	-1						
	71						
元素編號 節點	1	1	21	1	1	7	2
	1	2					
	2	1	21	1	1	7	2
	2	3					
	3	1	21	1	1	7	2
	3	4					
	4	1	21	1	1	7	2
	4	5					
	5	1	21	1	1	7	2
	5	6					
	6	1	21	1	1	7	2
	6	5					
	7	1	21	1	1	7	2
6	7						
8	1	21	1	1	7	2	
7	1						
	-1						

-1
15

節點編號

x

y

z

1	0	0	11	-.10000D+01	-0.50000D+00	0.00000E+00
2	0	0	11	0.00000D+00	-0.50000D+00	0.00000E+00
3	0	0	11	1.00000D+00	-0.50000D+00	0.00000E+00
4	0	0	11	1.00000D+00	0.50000D+00	0.00000E+00
5	0	0	11	0.00000D+00	0.50000D+00	0.00000E+00
6	0	0	11	0.00000D+00	0.00000D+00	0.00000E+00
7	0	0	11	-.10000D+00	0.50000D+00	0.00000E+00

-1

***** modify *****

NMODE=10 (try 前10個,含增根)

SLAMI=1.0 (下限)

SLAMA=1.5 (上限)

DSLAI=0.1 (間隔)

5. Output file 說明

(1) 97.dat for eigenvalues, boundary data and $u(x,y)$

(2) 98.dat for eigenvalues, boundary data and $u(x,y)$

(3) tt.dat coefficients of matrix $[T(\lambda_i)]$

(4) gg.dat coefficients of matrix $[M(\lambda_i)]$

eigenvalues and eigenmodes

SLAAT= 1.0000E+00 SLAAG= 1.00E+000

SLAAT= 10.00E+00 SLAAG= 10.0E+000

x	y	mode shapes
---	---	-------------

1.0000E+00

-.500000	-.500000	.015154
.500000	-.500000	.376052
1.000000	.000000	.427701
.500000	.500000	.479792
.000000	.250000	.639169
.000000	.250000	-.034694
-.050000	.250000	-.188379
-.550000	.000000	.000000

10.00E+00

-.500000	-.500000	.015154
.500000	-.500000	.376052
1.000000	.000000	.427701
.500000	.500000	.479792
.000000	.250000	.639169
.000000	.250000	-.034694
-.050000	.250000	-.188379
-.550000	.000000	.000000

SLAAT = eigenvalues from [T]

SLAAG = eigenvalues from [M]

eigenmodes 之輸出順序

以boundary data 爲先

interior point 爲後

6. 特殊問題應變技巧

因元素切過少或數值誤差有時造成漏根的情況發生，
解決之道如下：

(1) 由 91.dat 可知 $\det(\lambda_t)$, $\det(\lambda_m)$, 將 $|\det|$ 最接近零的根挑出

(2) 由箭頭處輸入

```
C*****C
C   Solve of Linear Algebraic Equation           C
C   Solve Eigenmode correspond to Eigenvalue     C
C*****C
  write(97,*)'SLAAT=eigenvalues from [T],SLAAM= eigenvalues from [M]'
  write(97,*)'output tried eigenmodes  '
  NSUB=NELM-1
  DO 33 I=1,nmode
  SLAAT=SLAMT(I)
  SLAAG=SLAMM(I)
C input double root
C  slaat=1.00000000 ← (λT)
C  slamt=1.00000000 ← (λM)
```