
2.1
2.2
2.3
2.4

3.1
3.2
3.3
3.4
3.5
3.6
3.7
3.8

4.1 SIN
4.2
4.3
4.4
4.5
4.6
4.7

5.1
5.2
5.3
5.4
5.5

6.1

6.2

6.3

6.4

6.5

6.6

6.7

7.1

7.2

7.3

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SI N

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1991

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2004

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Lenzen

●

2631/2

●

●

● Windows 2000 XP

● Rayleigh-Ritz

● MDI Multiple Document Interface

1.2

3.1

4.3

4.4

Rayleigh-Ritz

Tuned Mass Damper

2 1

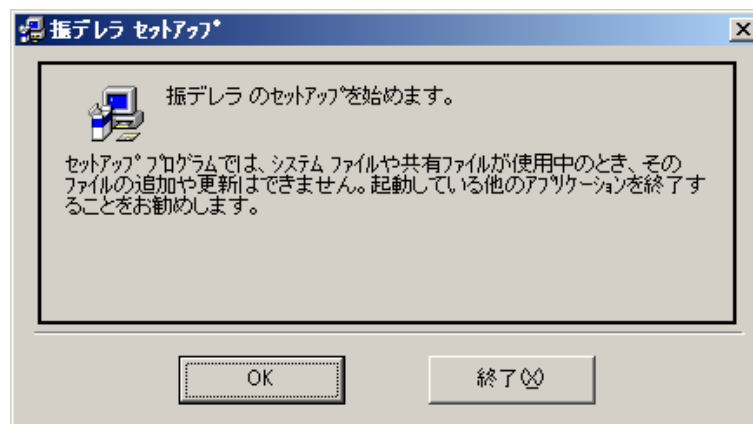
- Microsoft Windows 2000 XP

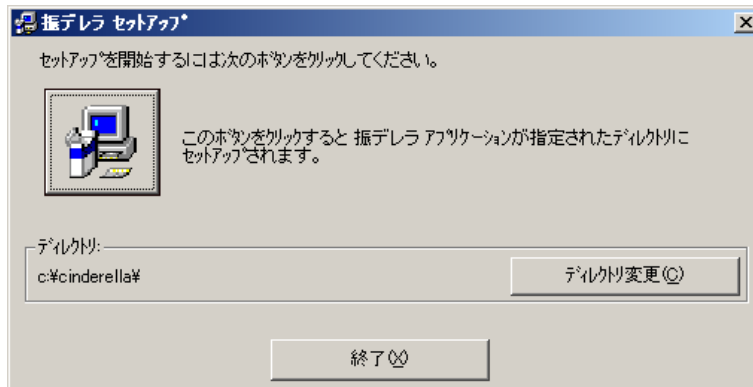
- 800x 600

-

-

*





2 2

2 2

(X)



2 3

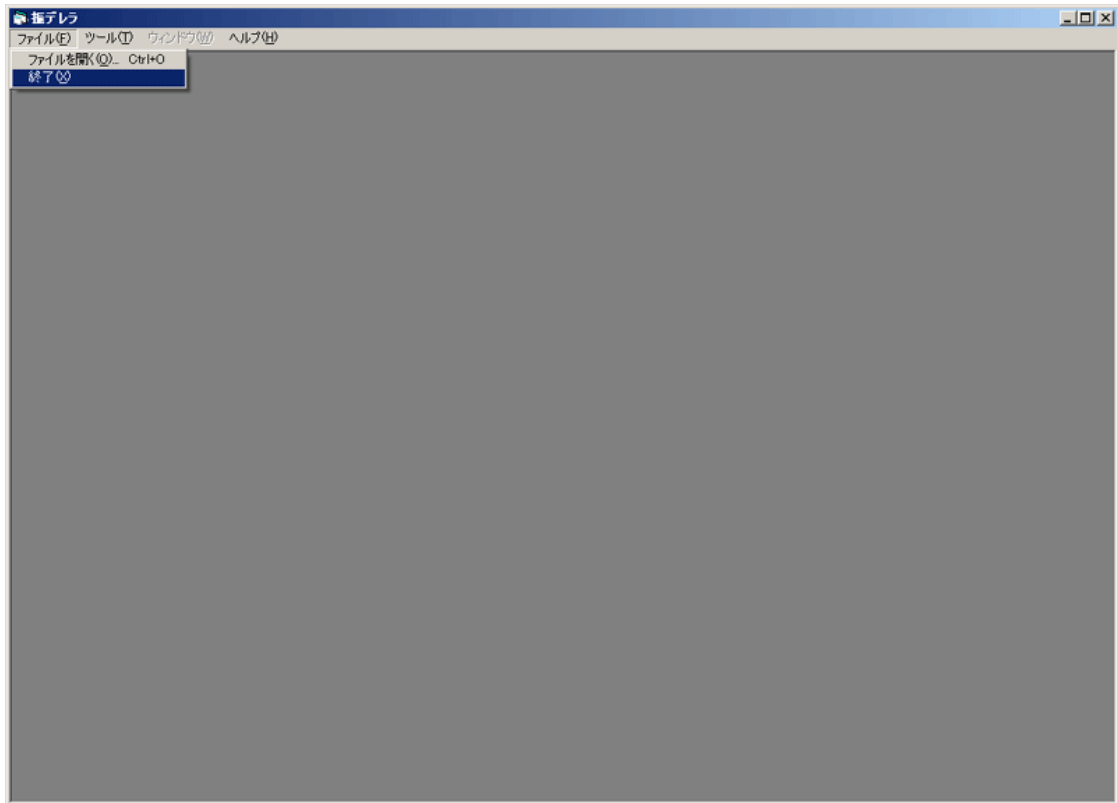
\ci nderel l a

\ci nderel l a\asvi \ffpl t. exe
 \asvi data\JCB
 *. i np
 \graphi cs\ci n. exe
 *. i co
 \userdata\manu. dat

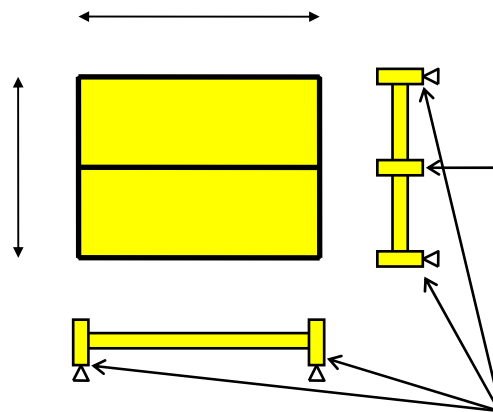
-
-
- \ci nderel l a \asvi , \asvi data, \graphi cs

 - \ci nderel l a \userdat a
-
-

c:\cinderella\Graphics\cin.exe



3 1



30cmx 80cm
H 600x 250x 9x 12

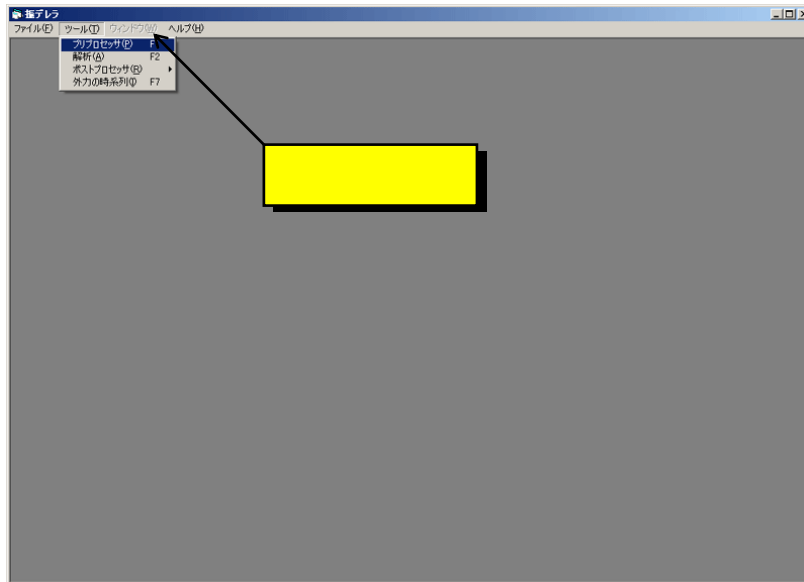
210t/cm²
0.167

2100t/cm²
0.3

3 1

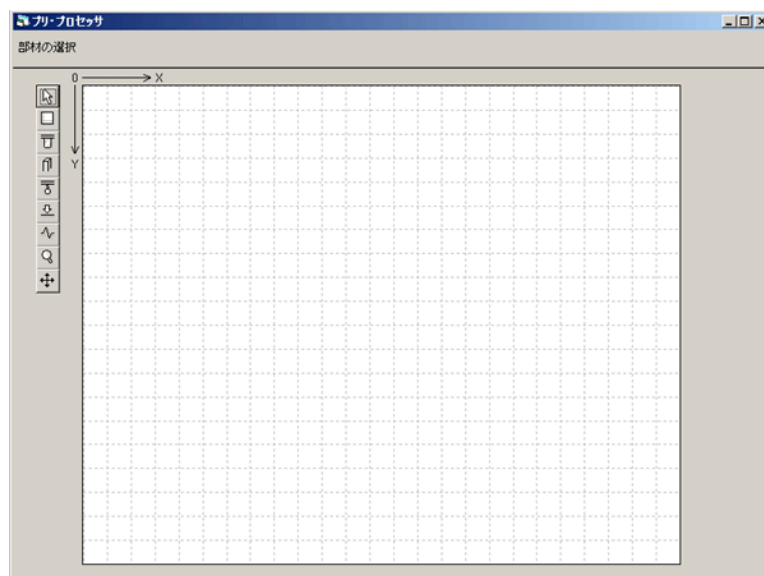
3.2

\\ci nderel I a\graphi cs\ci n. exe



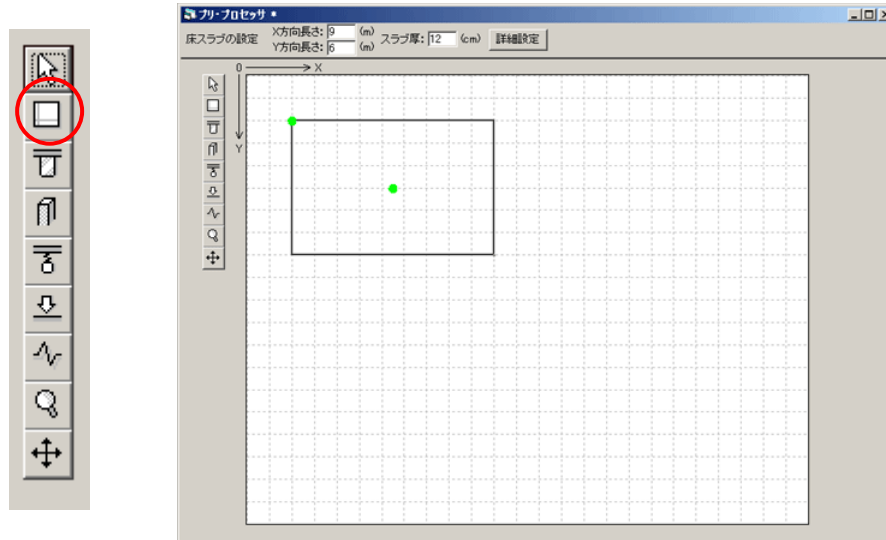
3.2

3.3

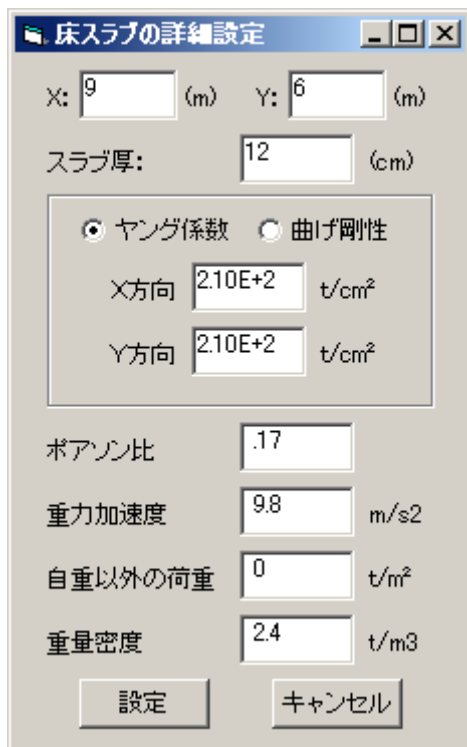


3.3

3 4



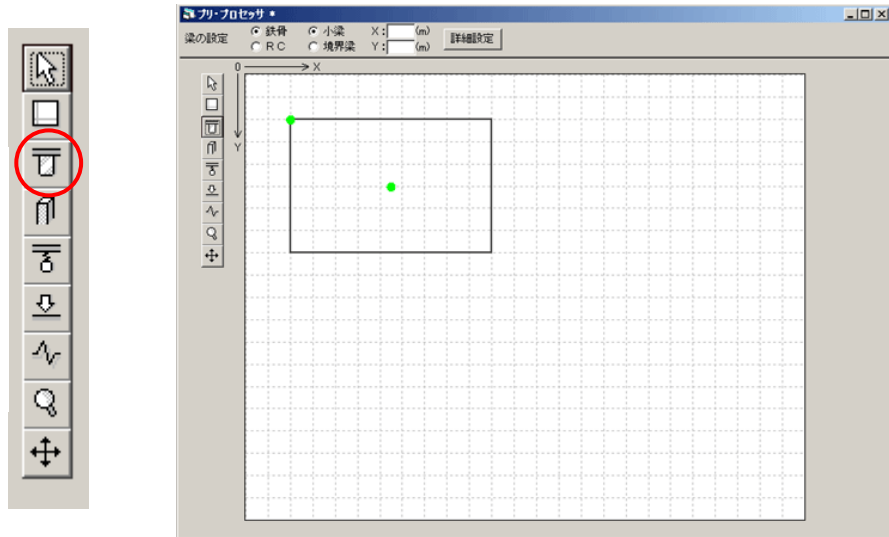
3 4



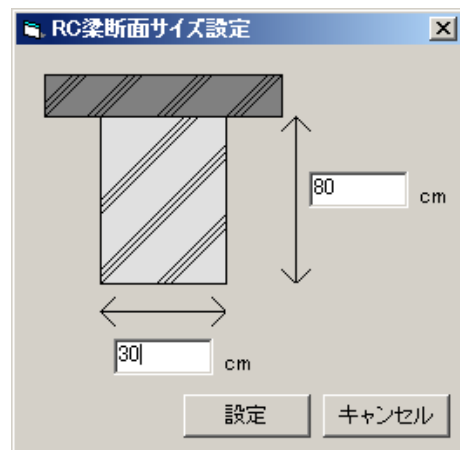
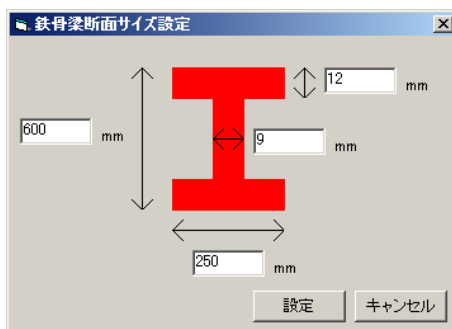
3 5

Q 5

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3 6

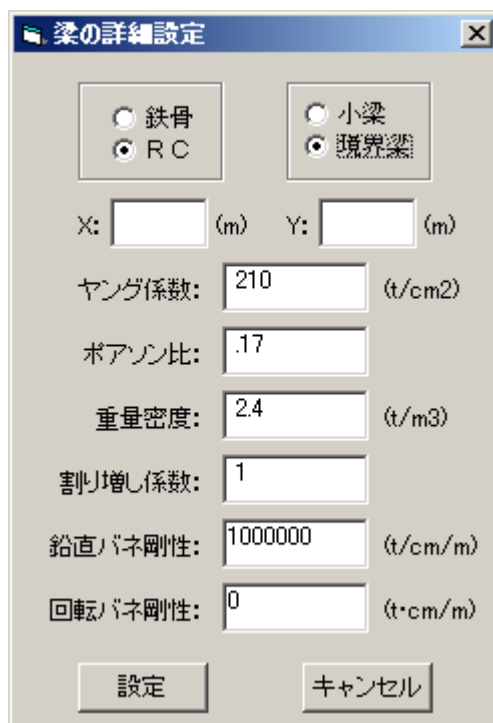


3 7

3 1



3 8

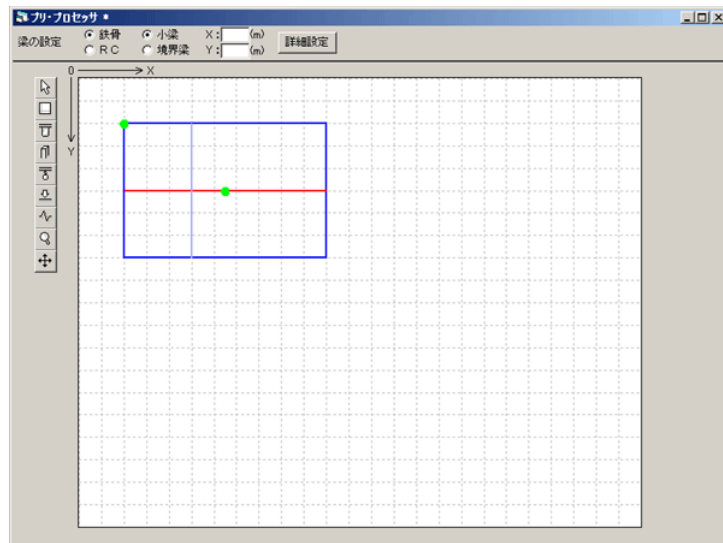


3 9

3 1

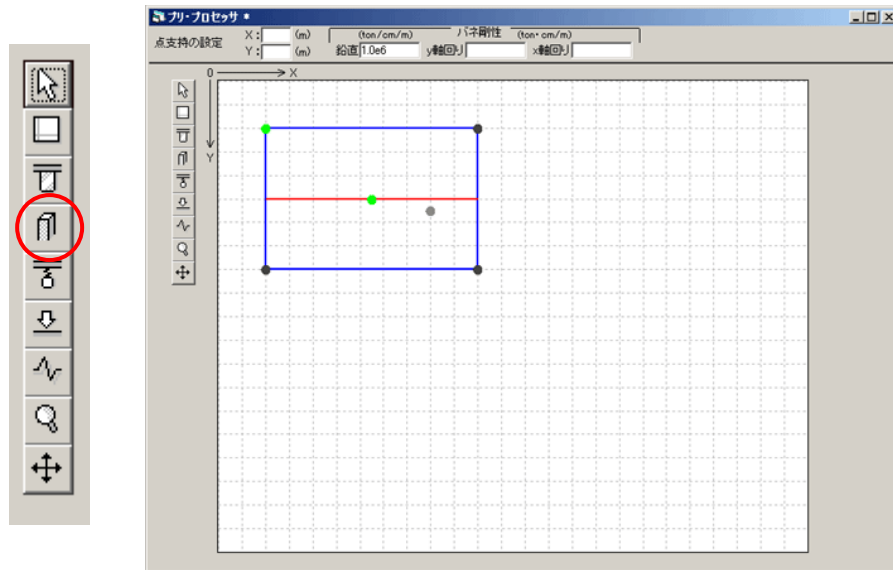
	[t/cm/m]	[t cm/m]	
	0.0	0.0	
	1.0e6	0.0	
	1.0e6	1.0e10	
	0.0	1.0e10	

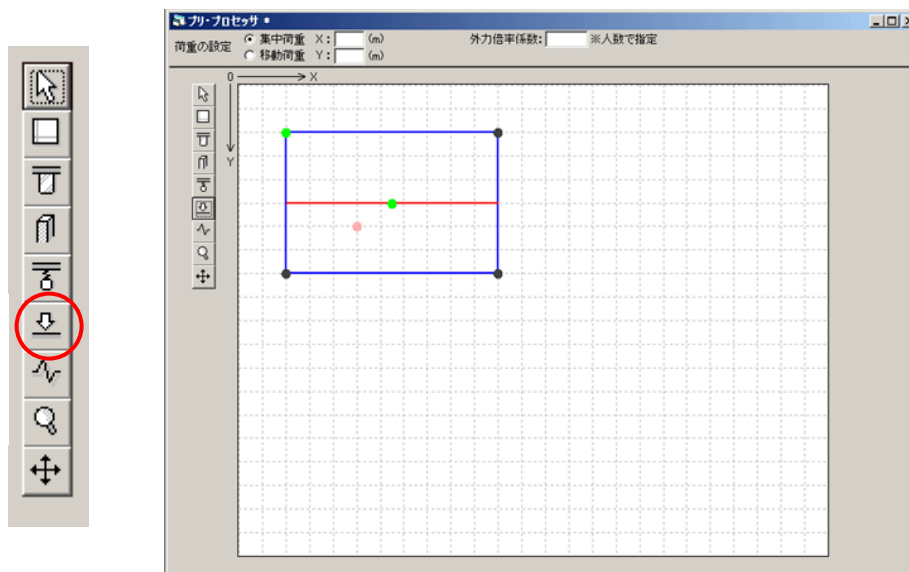
3 7

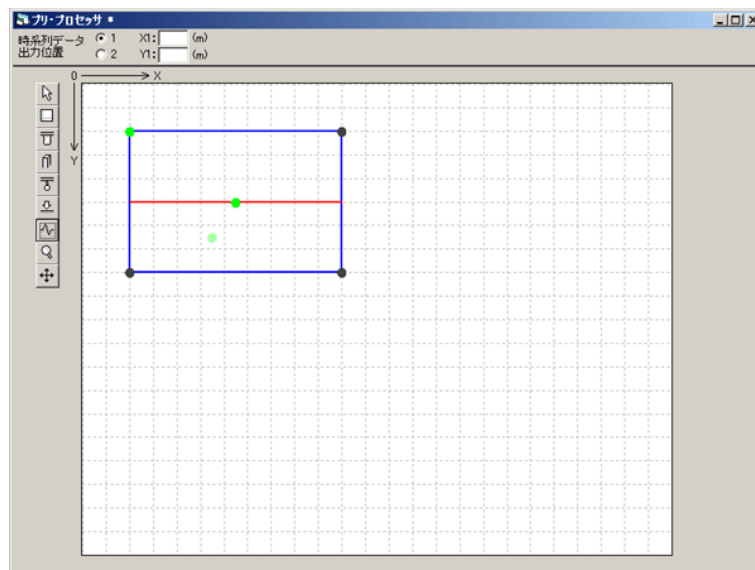


3 10

0.5







3 13

解析条件設定

解析種別

固有値解析

動的応答解析

形状関数のタイプ

梁関数

静的梁関数

多項式

感度解析

する

しない

梁のねじり変形

考慮する

考慮しない

動的応答解析計算方法

モード重合法

直接積分法

必要モードの数: 6

X方向の級数の項数: 6

Y方向の級数の項数: 6

X方向の数値積分の分割数: 40

Y方向の数値積分の分割数: 40

X方向の出力用分割数: 12

Y方向の出力用分割数: 12

単位面積当たりの鉛直バネ剛性 (ton/cm/m²): 0

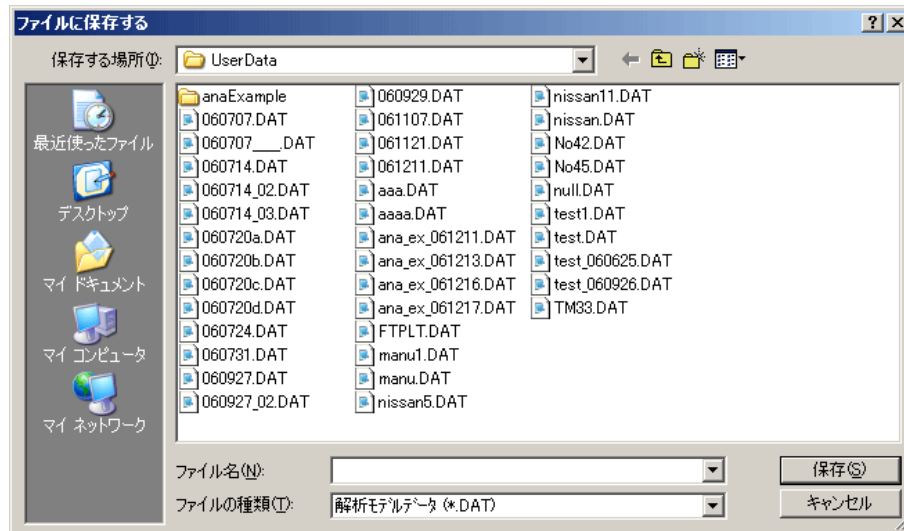
積分時間間隔 (s): .005

動的外力データのスタート時間 (s): 0

動的外力データの終了時間 (s): 8

時系列データの出力ステップ間隔: 1

設定 キャンセル



3 15

16

.dat

- FORTRAN

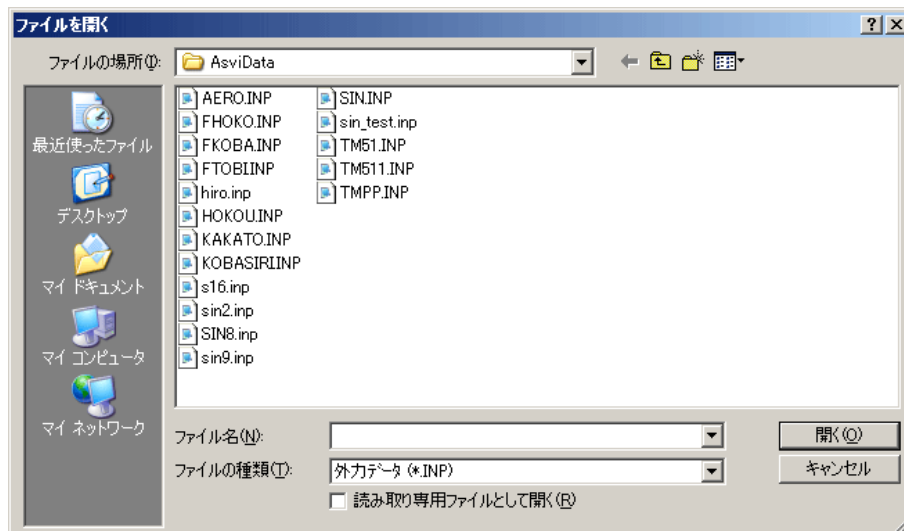
-

-

S I N

4.1

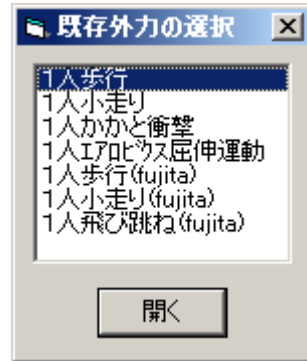
S I N



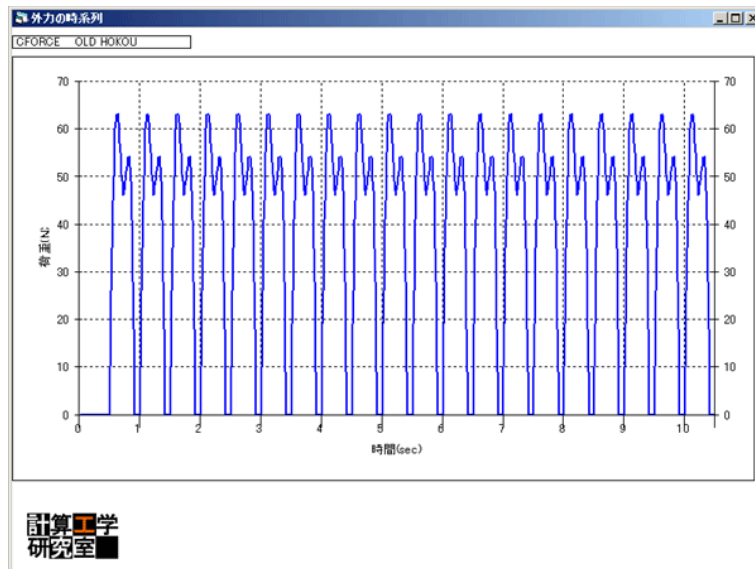
4.1

. i np

4.4

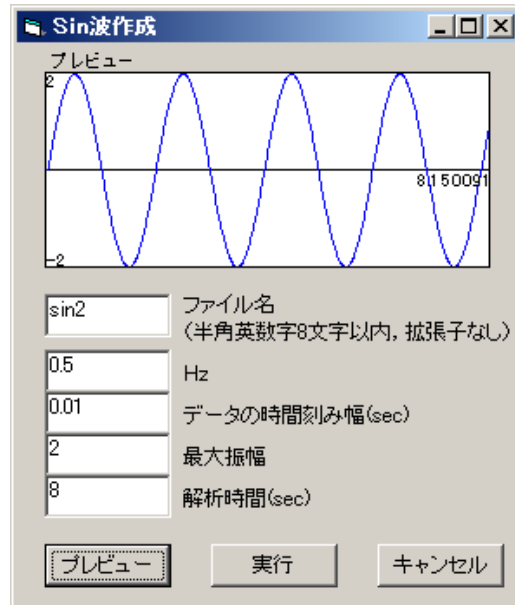


4.2



4.3

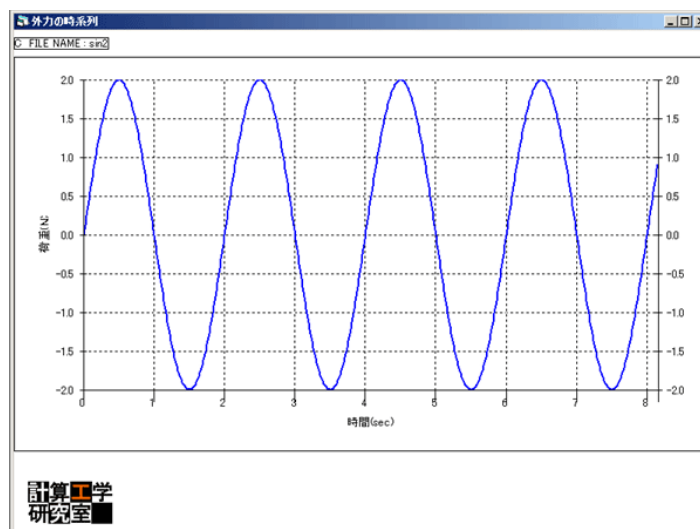
SIN



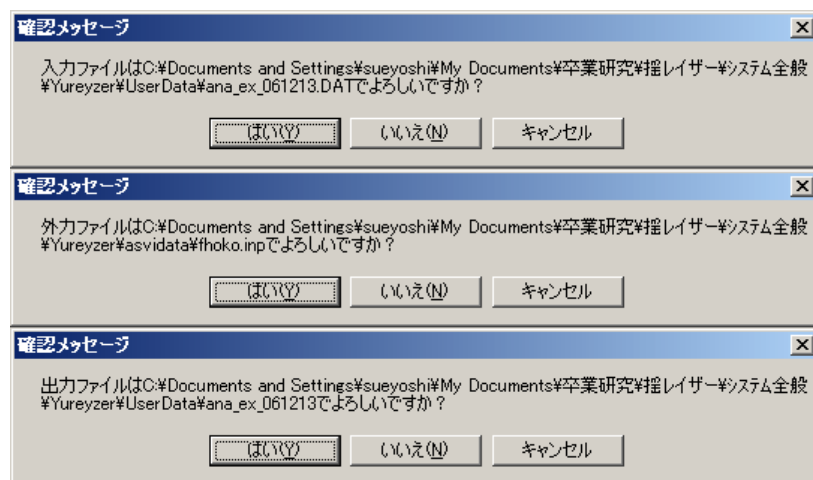
4.4 SIN

SIN

SIN



4.5 SIN



4.6

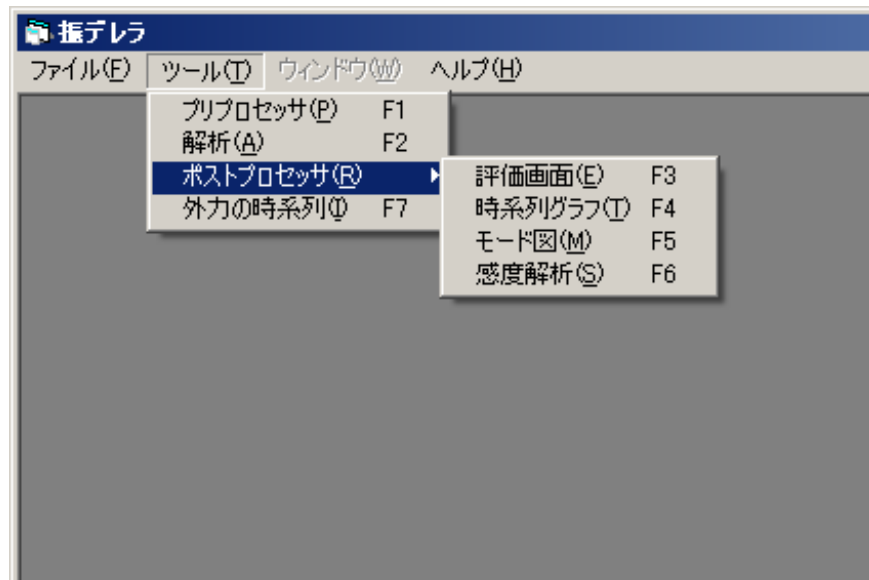
-

4.1

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-

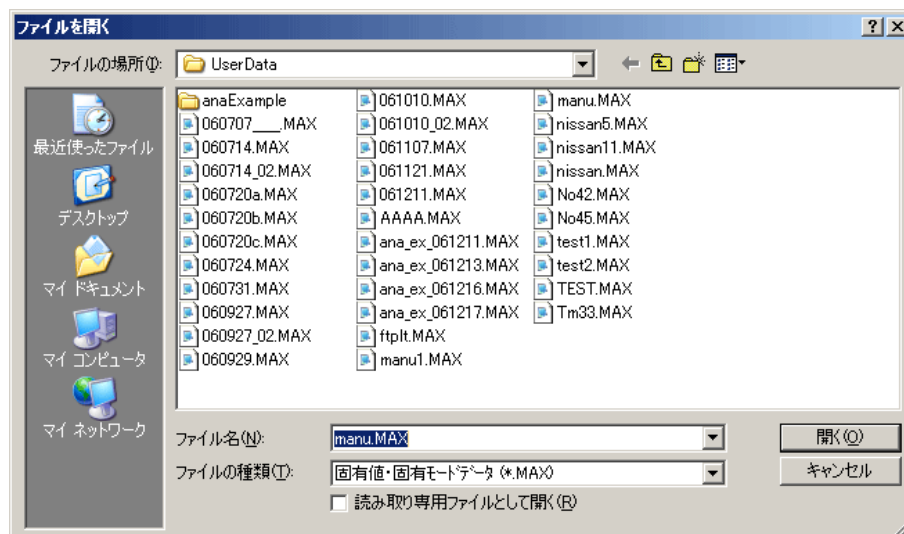
.MAX .HS .SNS



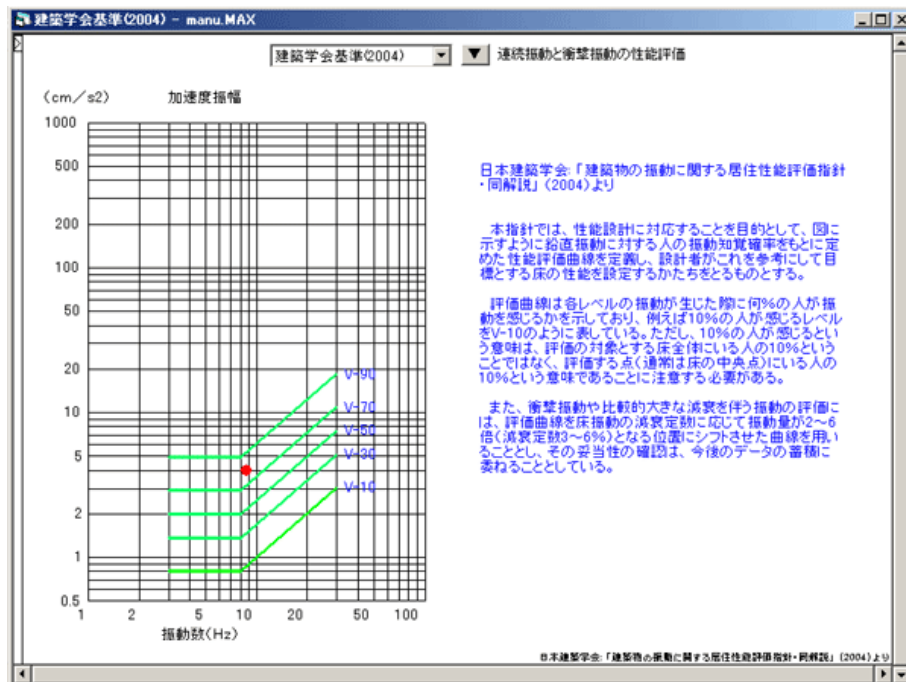
4.7

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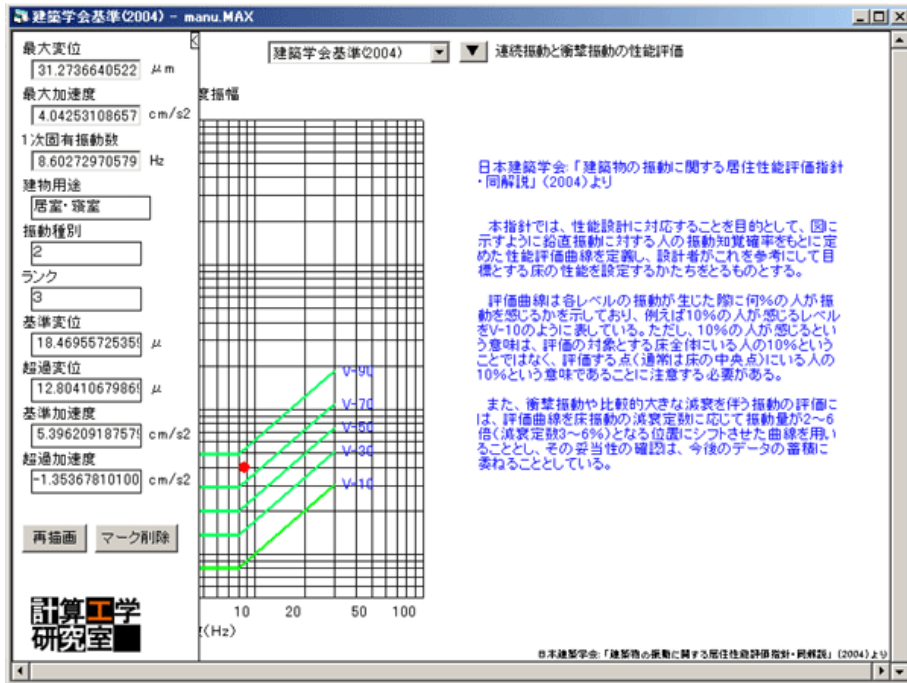
- MDI Multiple Document Interface
-



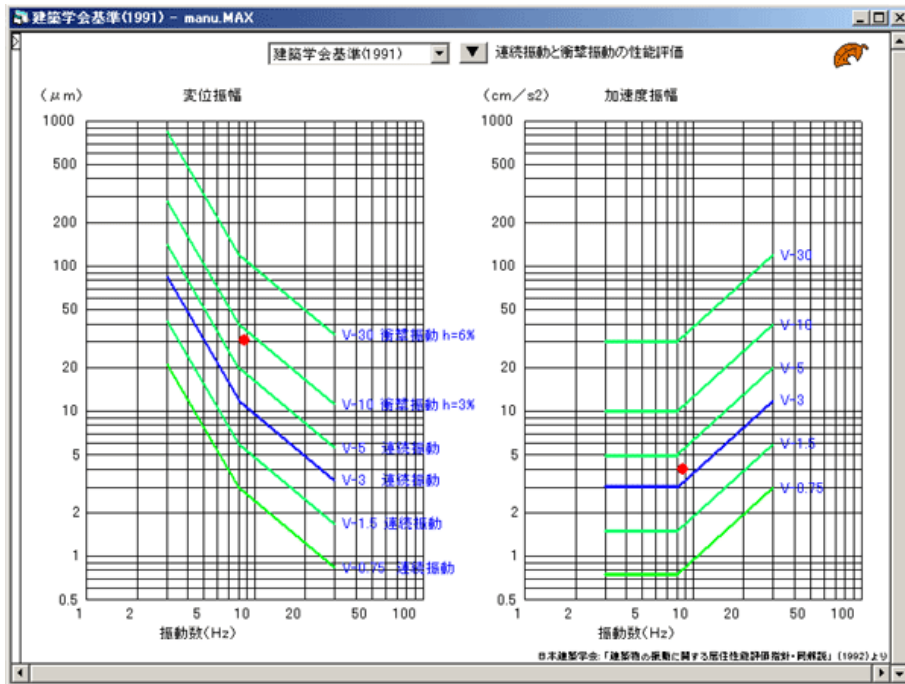
4.8



4.9



4. 10



4. 11

1991

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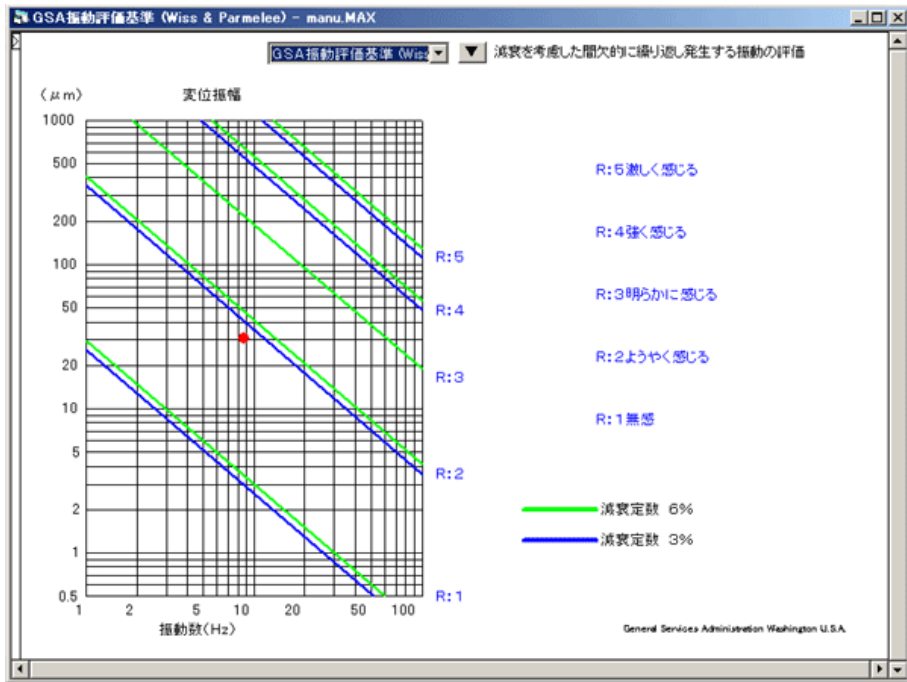
● 4. 10

●

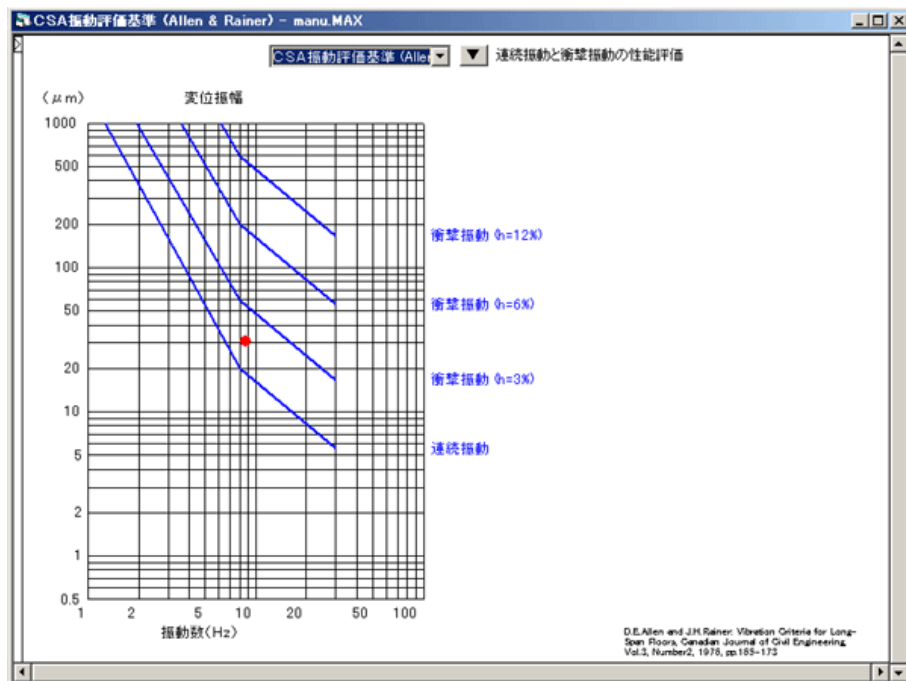
●

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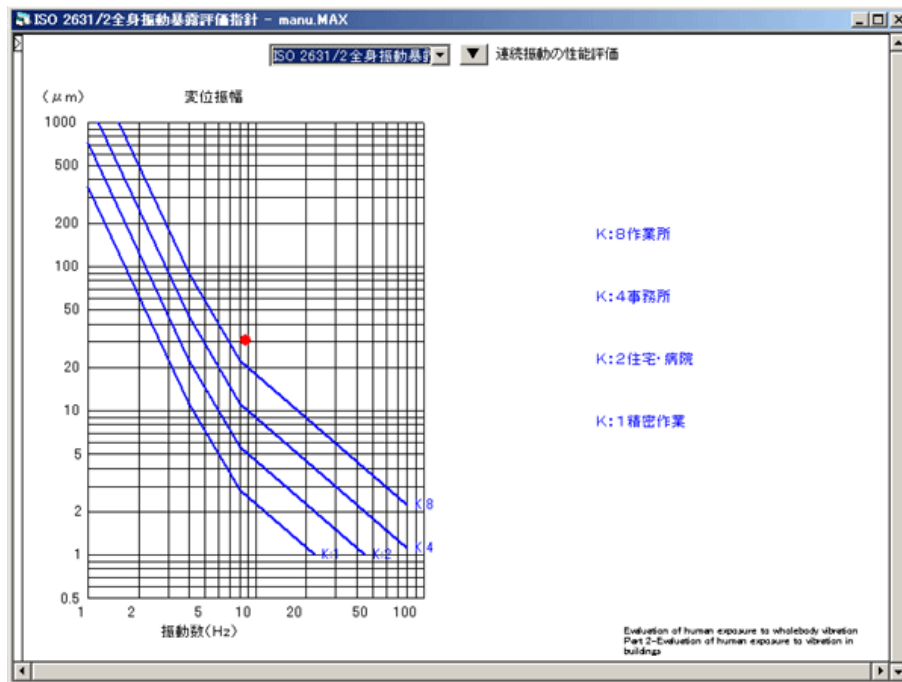
×



4. 12

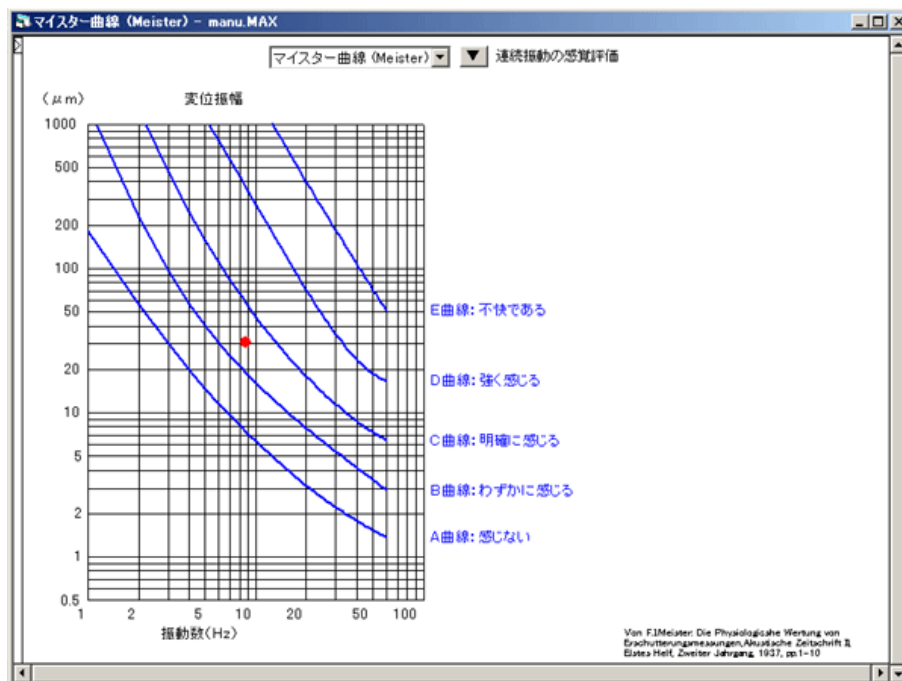


4. 13

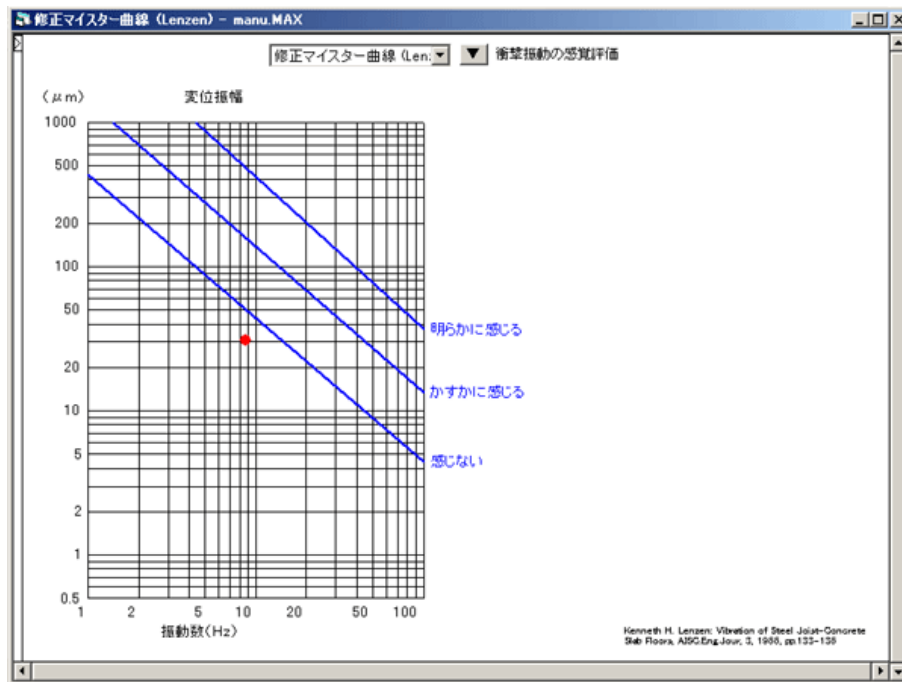


4. 14

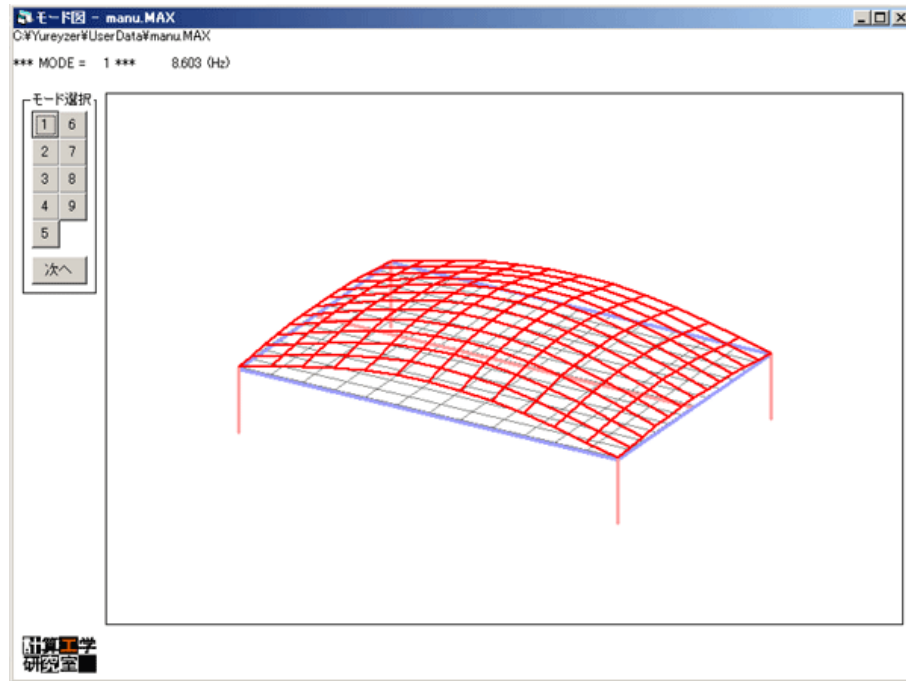
2631/2



4. 15



4. 16

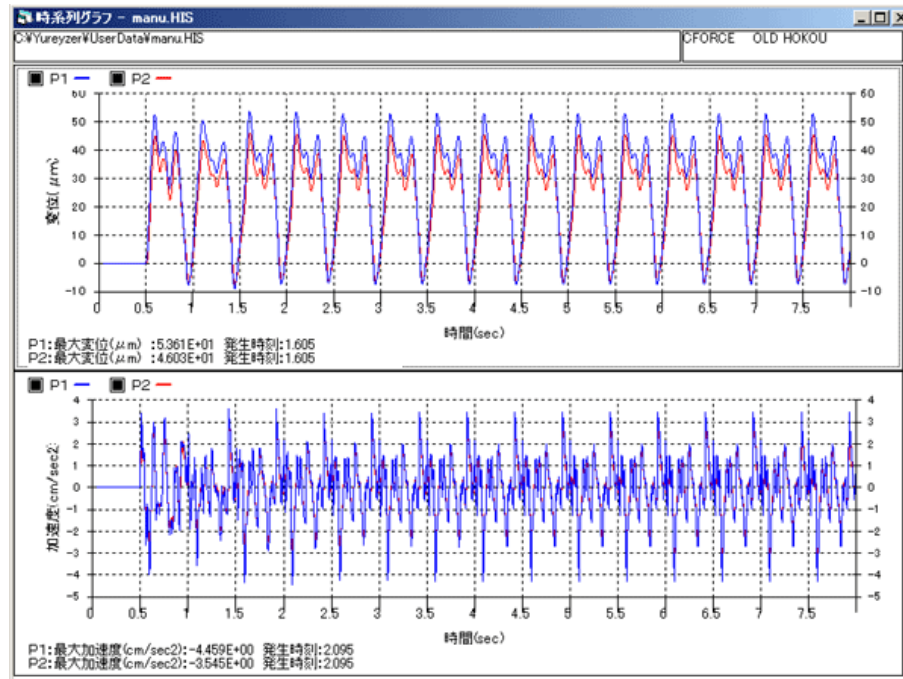


4.17

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- -
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4.17

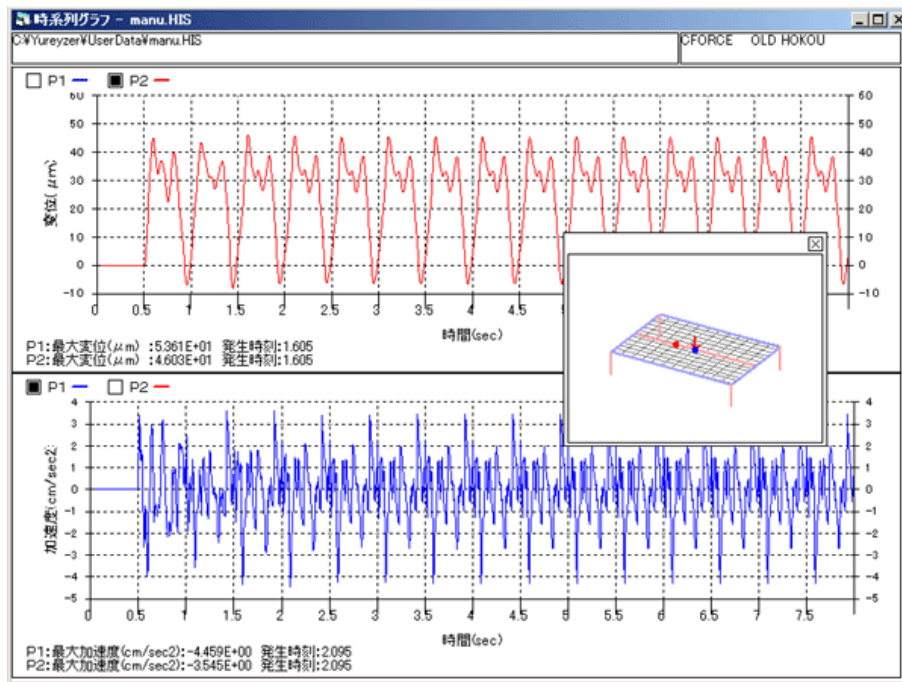
.MAX



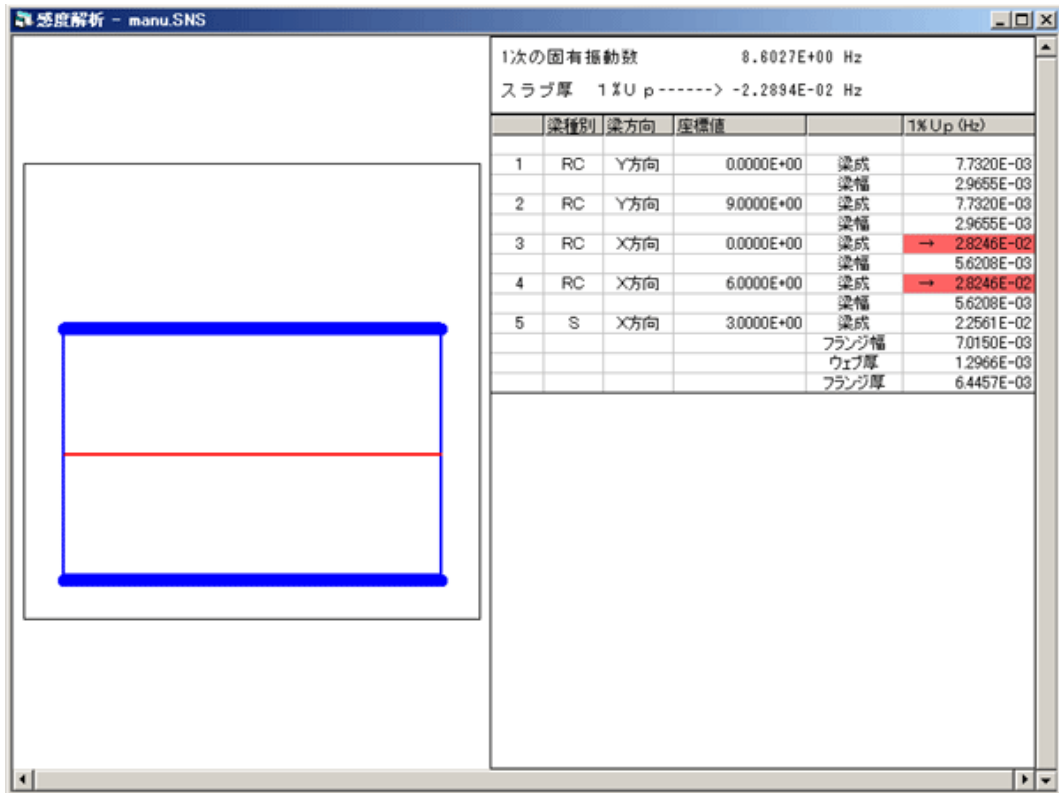
4.18

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.HS



4.19



4.20

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Hz

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Hz

5 1

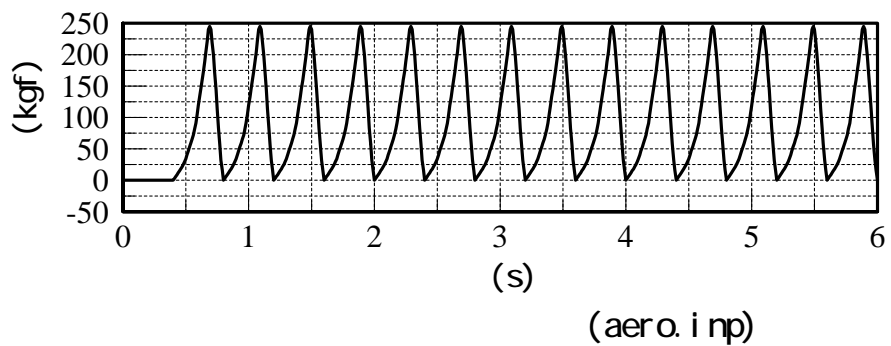
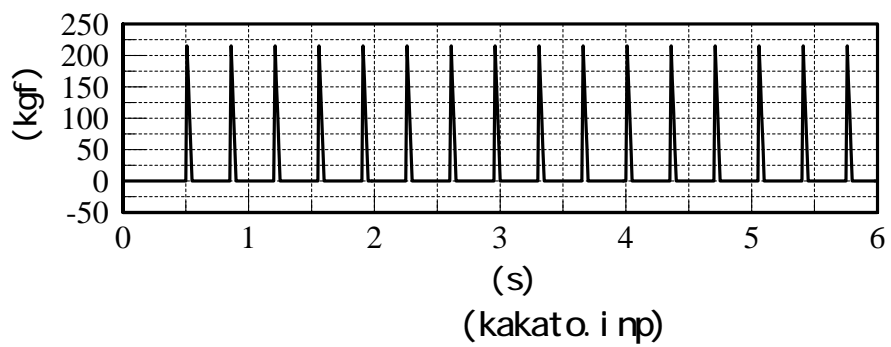
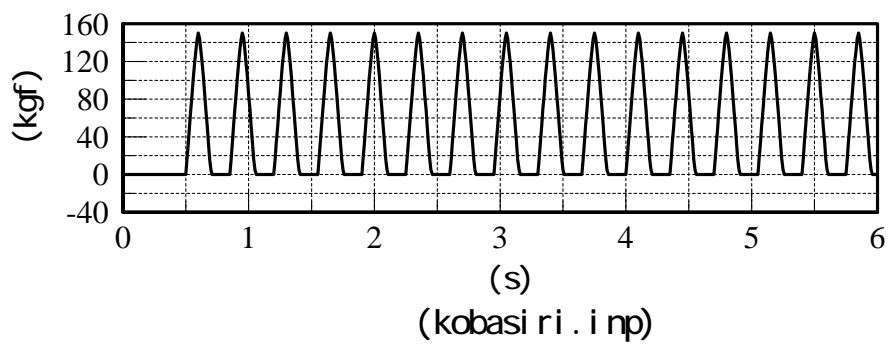
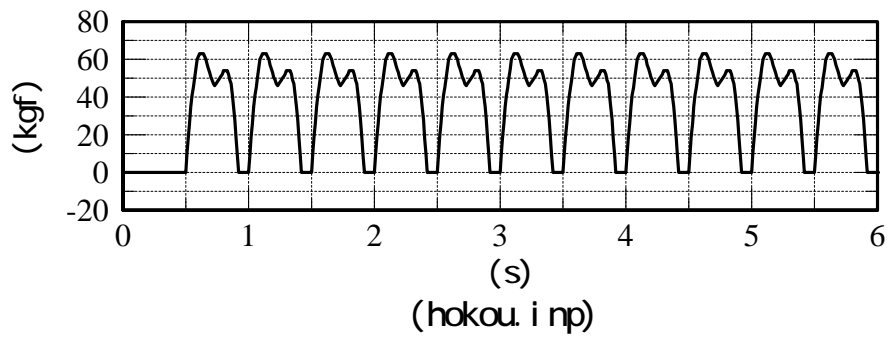
		<p style="text-align: right;">1 , 2</p> <p style="text-align: right;">=6 =6 =40 =12 =0 005 =0 =0 =8 =1</p> <p style="text-align: right;">_____</p> <p style="text-align: right;">_____</p> <p style="text-align: right;">_____</p>

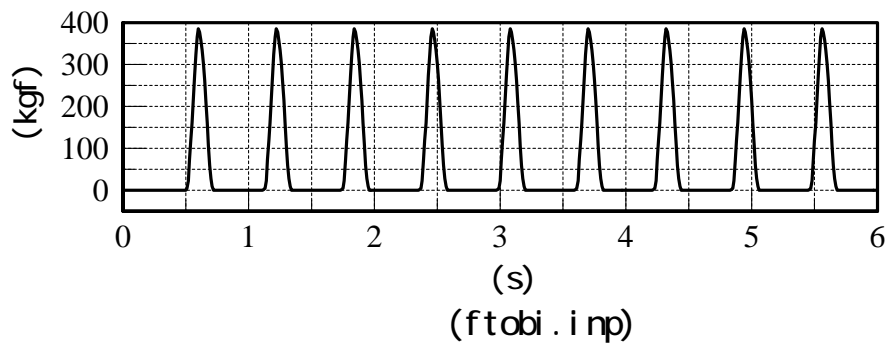
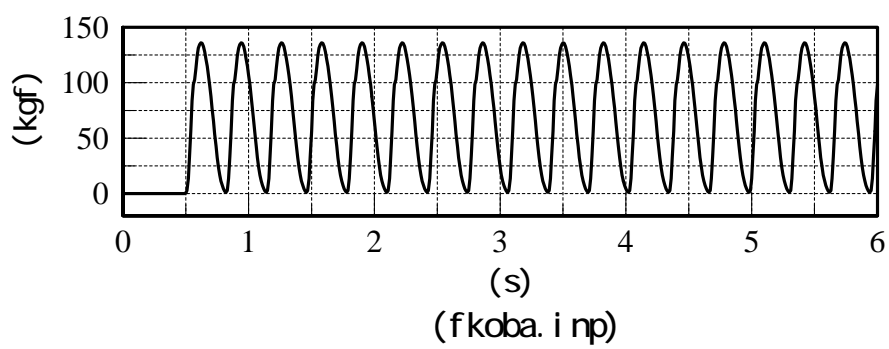
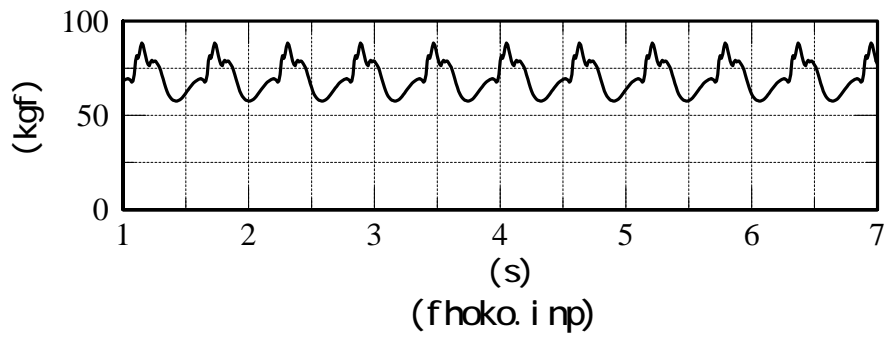
5.3

		2004 1991
		2631/2
		SI N SI N

5.4

		(s)				
hokou. i np		0.01	1050	kgf	63.0	2.00Hz
kobasi ri . i np		0.01	1050	kgf	150.0	2.86Hz
kakato. i np		0.01	1050	kgf	215.0	2.50Hz
aero. i np		0.01	1040	kgf	245.0	2.86Hz
fhoko. i np		0.01	950	kgf	88.2	1.71Hz
fkoba. i np		0.01	1050	kgf	135.9	3.08Hz
ftobi . i np		0.01	1050	kgf	383.5	1.60Hz





1) _____, 2004 _____

10 V-10 10
 10

2 6 3 6

2) _____, 1991 _____

3% V-5
 3-6% V-10
 V-30

3-30(Hz)

3) _____ Wss & Parnel ee _____

 Wss & Parnel ee

4) _____ Al len & Rai ner , 1976 _____

 Al len & Rai ner

3 10 30 3% 6% 12%

5) 2631/2 _____, 1989 _____

1-30(Hz)

2 4 8 K 2 K 4 K 1

K 8

6) 1- 80(Hz)
 , 1937 _____
(3- 100Hz)

7) 2- 50(Hz)
Lenzen , 1966 _____
Lenzen

Kirchhoff-Love

- I.
- II.
- III.



-
-

2 11

-

1. e10 3 1

-

14

3 14

6 2

(1)

(2)

(3)

x

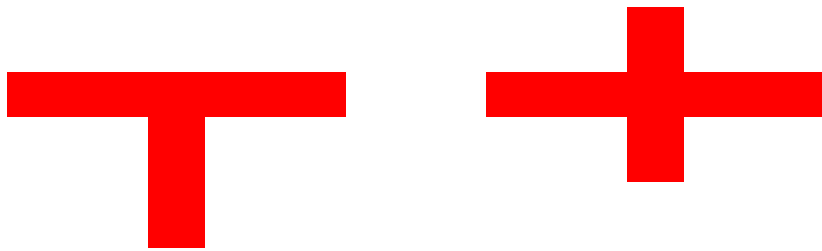
x

x x x x

63

24

-
-
-
-
-



$$f_2 = \frac{1}{\mu+1} f_1 \quad (5-1)$$

$$h_2 = \sqrt{\frac{3\mu}{8(1+\mu)}} \quad (5-2)$$

$$\mu = \frac{m_2}{m_1} \quad f_1 \quad f_2 \quad m_1 \quad h_2 \quad m_2$$

(5-2)

_____ k_2

$$k_2 = \mu \left(\frac{1}{\mu+1} \right)^2 m_1 (2\pi f_1)^2 \quad (5-3)$$

-
-
-

. MAX

EF. MASS for TMD =

-
-

2-3

2-11

2-9

Rayl ei gh

5.6

Hz

Hz

3-30Hz

3.16

A.4

-

-

-

10
0.56 [Hz]

3.16
 $0.028 \text{ [Hz/1\%]} \times 10 \text{ [\%]} \times []$

-

-

Kirchhoff-Love

- I.
- II.
- III.



-
-

2 11

-

1. e10 3 1

-

14

3 14

6 2

(1)

(2)

(3)

x

x

x x x x

63

24

B 1

1.3

\yureyzer\userdata

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*.inp

*.nax

*.his

*.sns

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[ ]

      I TYP
I TYP      [=1:      ] =2      =3

      I LDT, MD, I FUN, MAX, MAX, NX, NY, NO, NO

I LDT
      =0:      I TYP=1
      =n (n<100):      I TYP 2
      =100:      I TYP=3
      =- 1:      I TYP=3

MD      I TYP>1

I FUN
      =0:
      =1:
      =2:

MAX      =6
MAX      =6
NX      =40
NY      =40
NO      =12
NO      =12

      KMAX, LXX, LYX, I SPR, I TCR, KIMD, I NTG

KMAX      KMAX=0 8
LXX      *
LYX      *
I SPR =0:      =1:
I TCR =0:      =1:
KIMD TMD
I NTG      =0:      =1:
*

```

HD, ALX, ALY, ZM, ZMA, GR

HD
ALX
ALY
ZM
ZMA
GR

_____ I TYP>1
_____ I TYP>1
_____ I TYP>1

EEX, EEY, PPX, DX, DY, ANX, ANY

EEX
EEY
PPX
DX
DY
ANX
ANY

EEX=EEY=0 PPX=0
EEX=EEY=0
EEX=EEY=0

K_f

K_f

k, m, x, y, h KIMD

k TMD
m TMD
x TMD
y TMD
h TMD

X, Y, K_p, K_{px}, K_{py} KMAX

X
Y
K_p
K_{px}
K_{py}

X, K_f, R_f LXK

X
K_f
R_f

10 Y, K₁, R₁ LYMK
 Y
 K₁
 R₁

11 ID, IS, A1, A2, A3, A4, ZMB, Po, E, CO LXMK
 ID =0 =1: A =2: B
 IS =0 =2: RC =4: S
 A1 [IS=0] IS=2 IS=4
 A2 [IS=0] IS=2 IS=4
 A3 [IS=0] IS=2 IS=4
 A4 [IS=0] IS=2 IS=4
 ZMB
 Po
 E
 CO

12 ID, IS, A1, A2, A3, A4, ZMB, Po, E, CO LYMK
 ID =0 =1: C =2: D
 IS =0 =2: RC =4: S
 A1 [IS=0] IS=2 IS=4
 A2 [IS=0] IS=2 IS=4
 A3 [IS=0] IS=2 IS=4
 A4 [IS=0] IS=2 IS=4
 ZMB
 Po
 E
 CO 1.0

13 P, PX, PY I TYP=1, 3 ILDT(<100) or
 P I TYP=1: I TYP=3:
 PX ILDT=100
 PY ILDT=100

14 W, VX1, VY1, VX2, VY2 I TYP=3 ILDT=100 0
 W
 VX1
 VY1
 VX2
 VY2

15 PX1, PY1, PX2, PY2 I TYP=3

PX1

PY1

PX2

PY2

16 DI, DST, DEN I TYP=3

DI

DST

DEN

17 IDMP, ITV I TYP=3

IDMP =0 =1:

[=2]

=- 1: Rayl ei gh *

ITV

*TMD Rayl ei gh

18 H =1, MD I TYP=3

H

B. 3

DDI

DDI

FCRM

FCRM

FORTRAN

PP(I), I=1, LP (LP=DEN/DDI)

PP(I)