

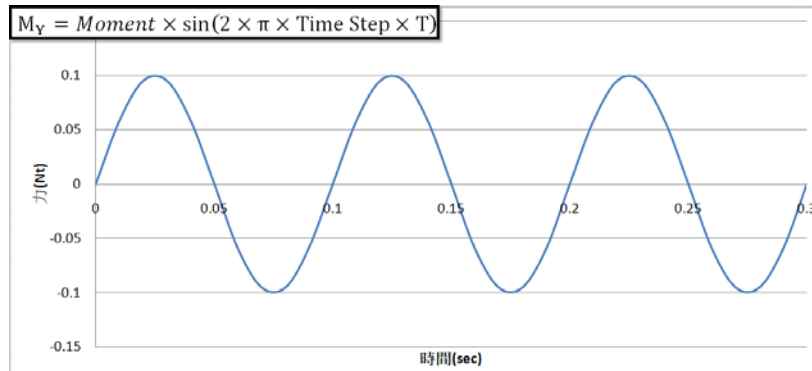


VCM彈片_瞬態結構分析

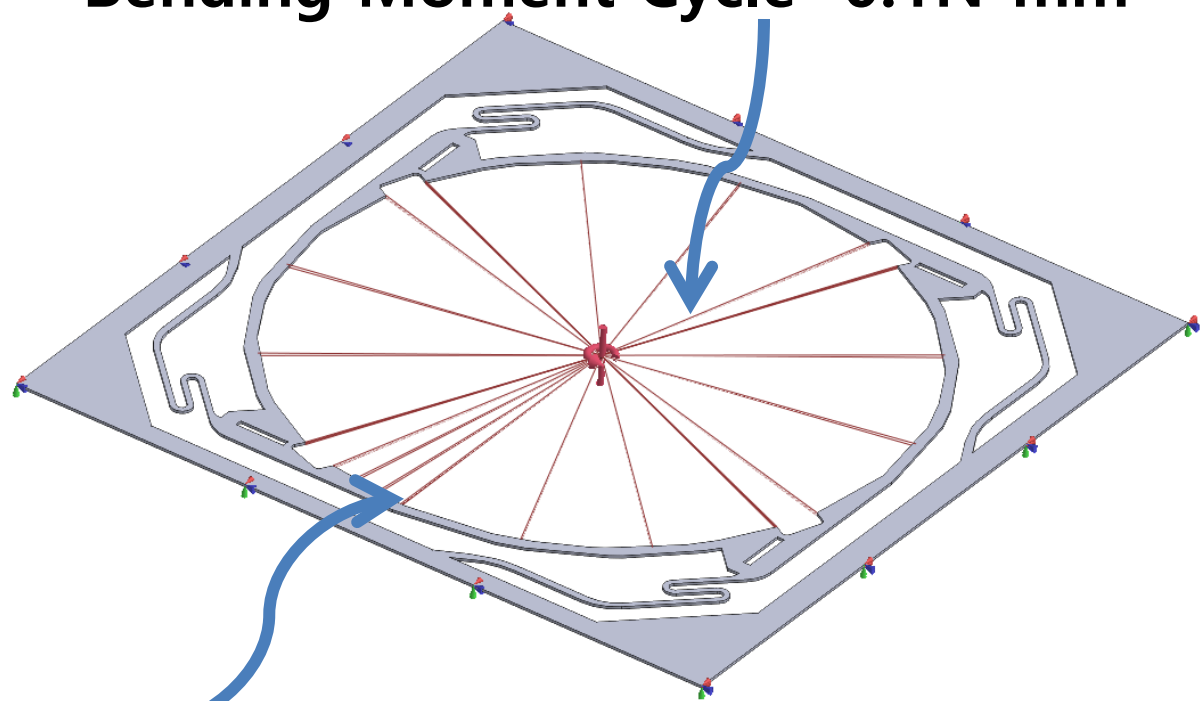
Simple, but Everything.



瞬態響應-模態法



Bending Moment Cycle=0.1N-mm



彈片周圍
固定X,Y,Z

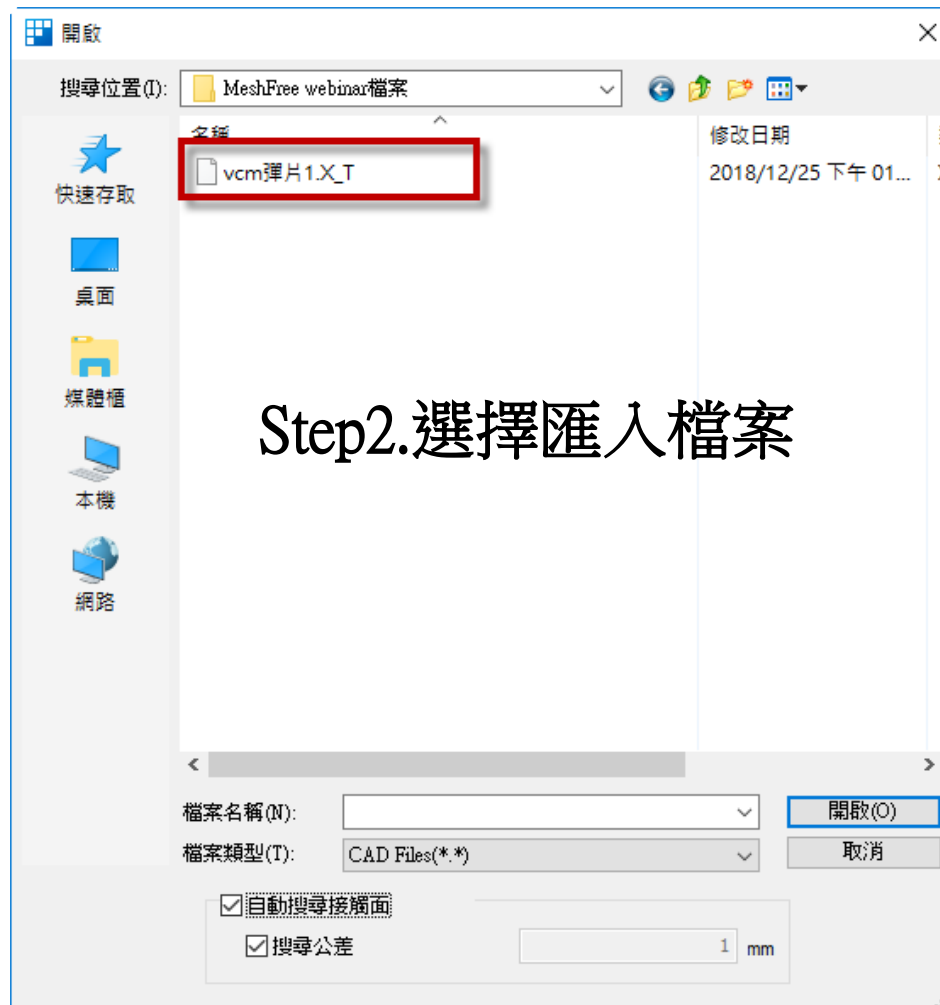
材料: AISI 1008



Step1.匯入3D 模型

MeshFree支援各類CAD 格式

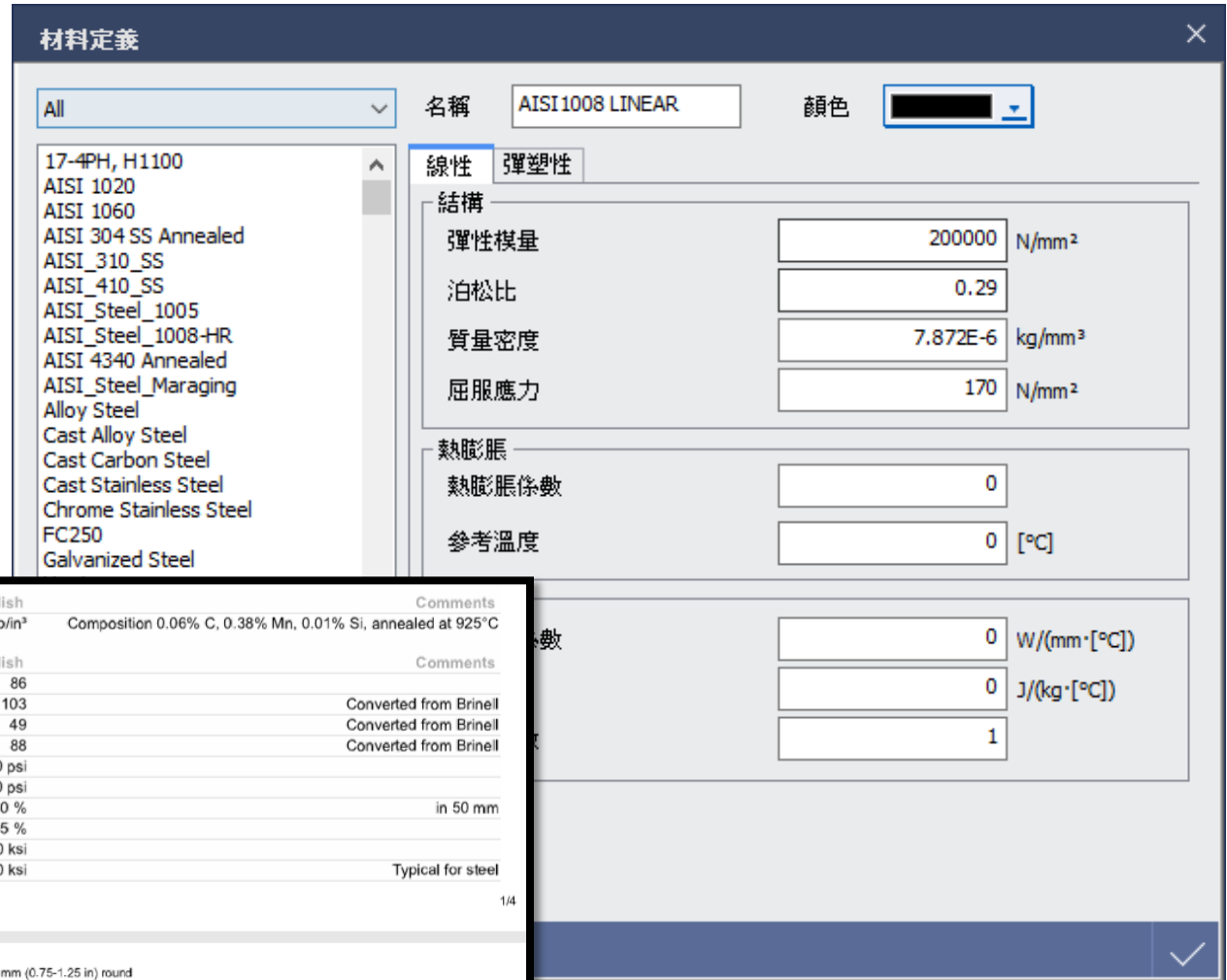
Parasolid (9 - 29) Files (*.x_t;*.xmt_txt;*.x_b;*.xmt_bin)
 ACIS (R1 - 2017 1.0) Files (*.sat;*.sab;*.asat;*.asab)
 STEP (AP203, AP214, AP242) Files (*.stp;*.step)
 IGES (Up to 5.3) Files (*.igs;*.iges)
 Pro-E (16 - Cren 3.0) Files (*.prt;*.prt.*;*.asm;*.asm.*)
 CATIA V4 (CATIA 4.1.9 - 4.2.4) Files (*.model;*.exp;*.session)
 CATIA V5 (V5R8 - V5-6R2016) Files (*.CATPart;*.CATProduct)
 Solid Works (98 - 2017) Files (*.sldprt;*.sldasm)
 Unigraphics (11 - NX11) Files (*.prt)
 Inventor Part (V6 - V2017) Files (*.ipt)
 Inventor Assembly (V11 - V2017) Files (*.iam)
 Solid Edge (V18 - ST9) Files (*.par;*.asm;*.psm)



Step2.選擇匯入檔案



新增材料(AISI 1008)



Physical Properties	Metric	English	Comments
Density	7.872 g/cc	0.2844 lb/in³	Composition 0.06% C, 0.38% Mn, 0.01% Si, annealed at 925°C
Mechanical Properties	Metric	English	Comments
Hardness, Brinell	86	86	
Hardness, Knoop	103	103	Converted from Brinell
Hardness, Rockwell B	49	49	Converted from Brinell
Hardness, Vickers	88	88	Converted from Brinell
Tensile Strength, Ultimate	305 MPa	44200 psi	
Tensile Strength, Yield	170 MPa	24700 psi	
Elongation at Break	30 %	30 %	in 50 mm
Reduction of Area	55 %	55 %	
Modulus of Elasticity	200 GPa	29000 ksi	
Bulk Modulus	160 GPa	23200 ksi	Typical for steel

http://www.matweb.com/search/DataSheet.aspx?MatGUID=b76f3b18bd814e449d3a8b4a906af771&ckck=1

2018/12/26 AISI 1008 Steel, hot rolled bar, 19-32 mm (0.75-1.25 in) round

Poissons Ratio	0.29	0.29	Typical For Steel
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AISI 1008材料係數_參考 www.matweb.com



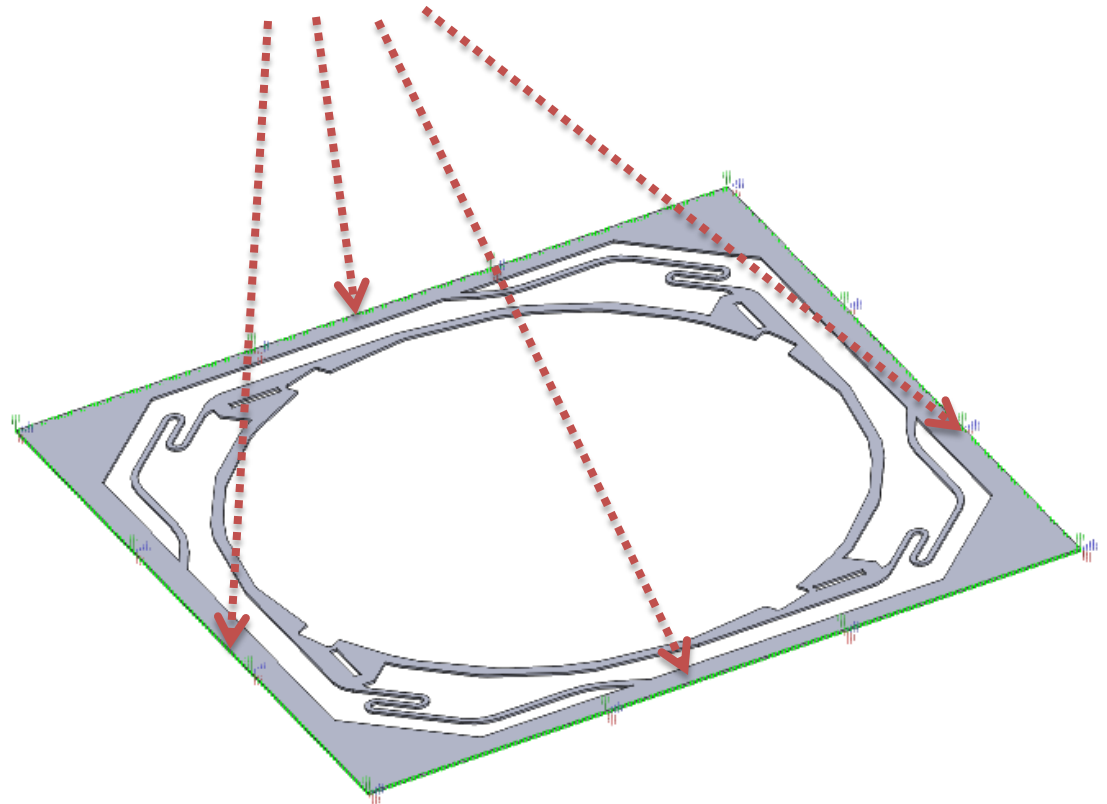
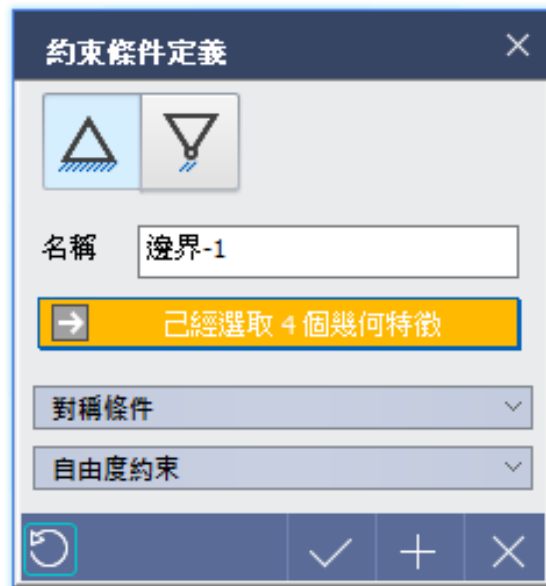
滑鼠右鍵,材料定義



模型樹會顯示指定的材料

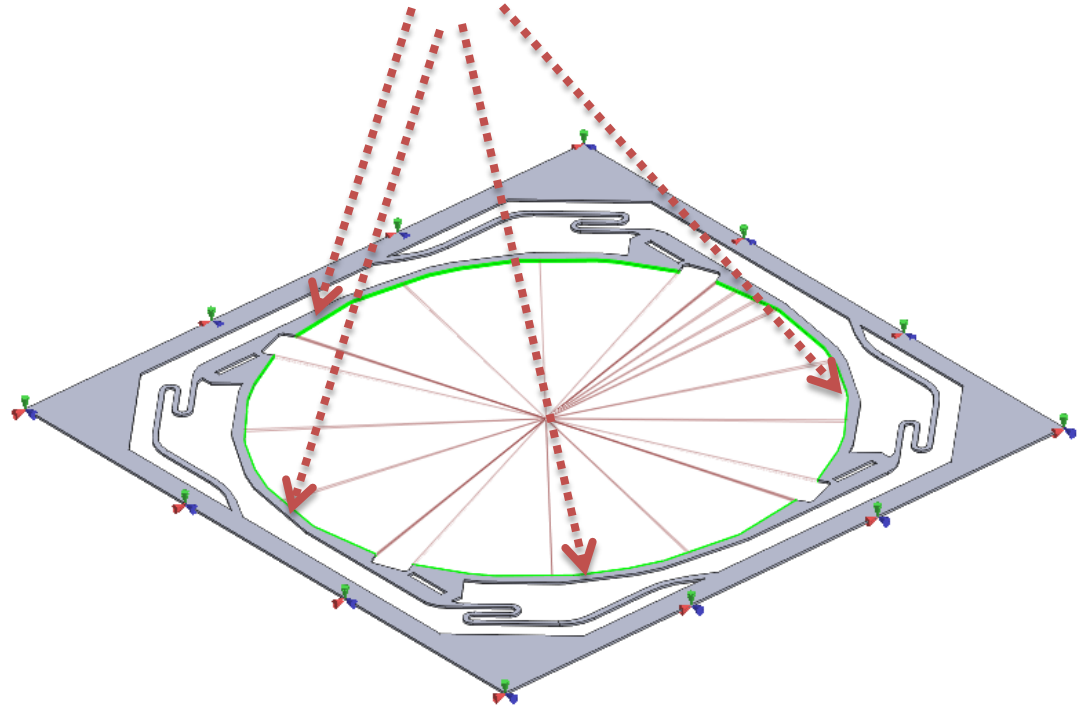


選取四周特徵拘束



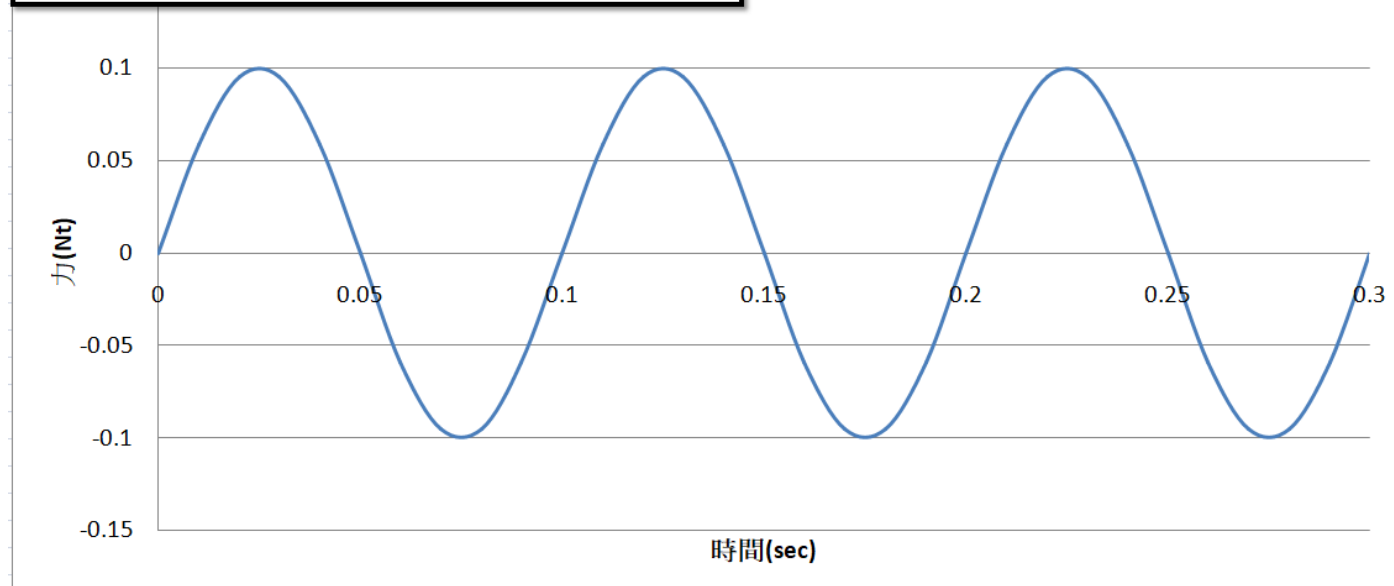


選取孔內徑特徵



時間(Sec)	My
0	0
0.01	0.058779
0.02	0.095106
0.03	0.095106
0.04	0.058779
0.05	1.23E-17
0.06	-0.058779
0.07	-0.095106
0.08	-0.095106
0.09	-0.058779
0.1	-2.45E-17
0.11	0.058779
0.12	0.095106
0.13	0.095106
0.14	0.058779
0.15	3.68E-17
0.16	-0.058779
0.17	-0.095106
0.18	-0.095106
0.19	-0.058779
0.2	1.29E-16
0.21	0.058779
0.22	0.095106
0.23	0.095106
0.24	0.058779
0.25	-2.94E-16
0.26	-0.058779
0.27	-0.095106
0.28	-0.095106
0.29	-0.058779
0.3	6.37E-16

$$M_Y = \text{Moment} \times \sin(2 \times \pi \times \text{Time Step} \times T)$$



集中質量 初始速度 時間-力 時間-壓力 時間-位移 時間-速度 時間-加速度

載荷

時間-力

名稱 時間相關荷載-1

負載

類型 彎矩荷載

主

☒ 點 ☐ 座標

0, 0, 0

從 選取幾何特徵

方向

X 0 N·mm

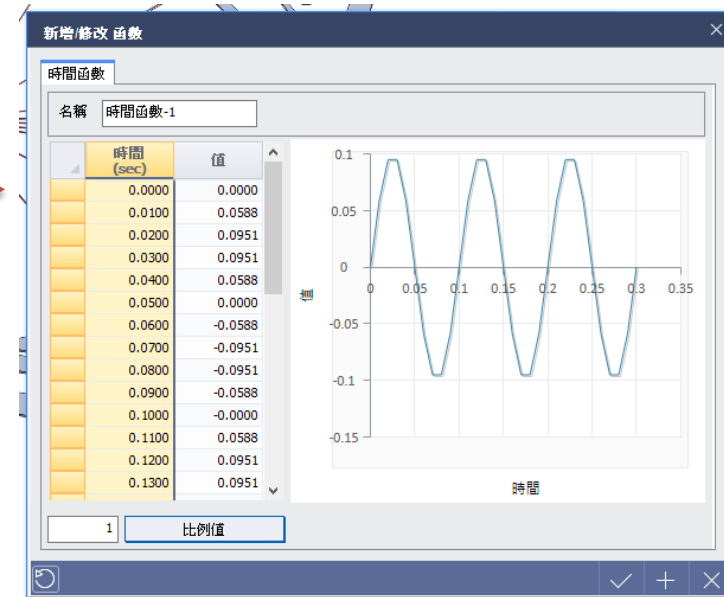
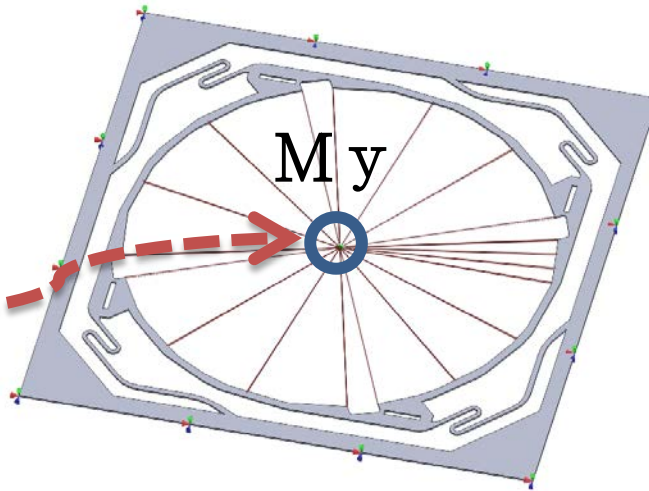
Y 1 N·mm

Z 0 N·mm

時間函數

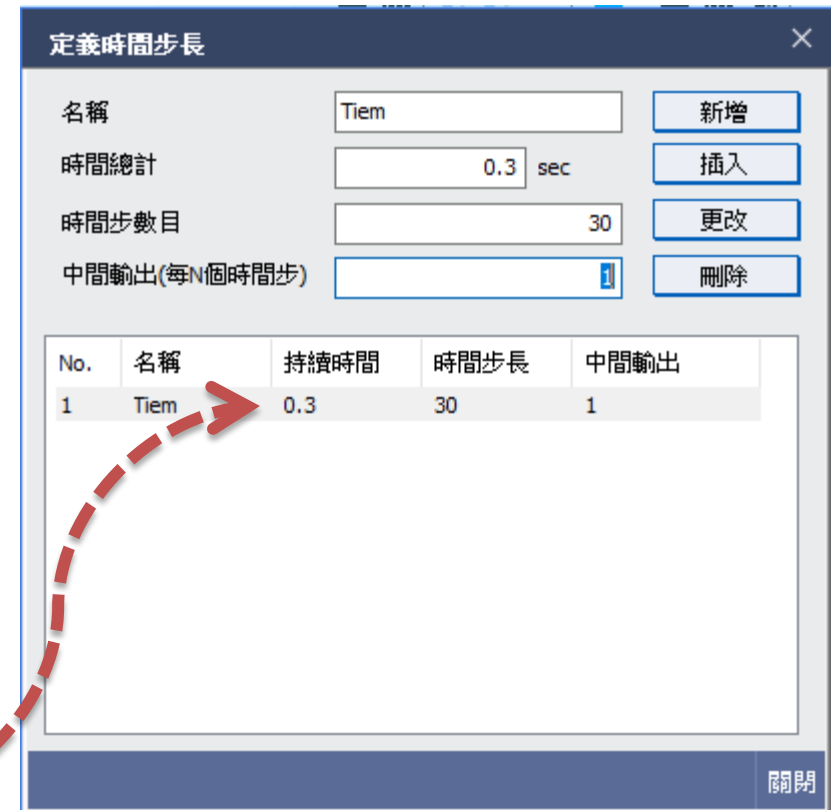
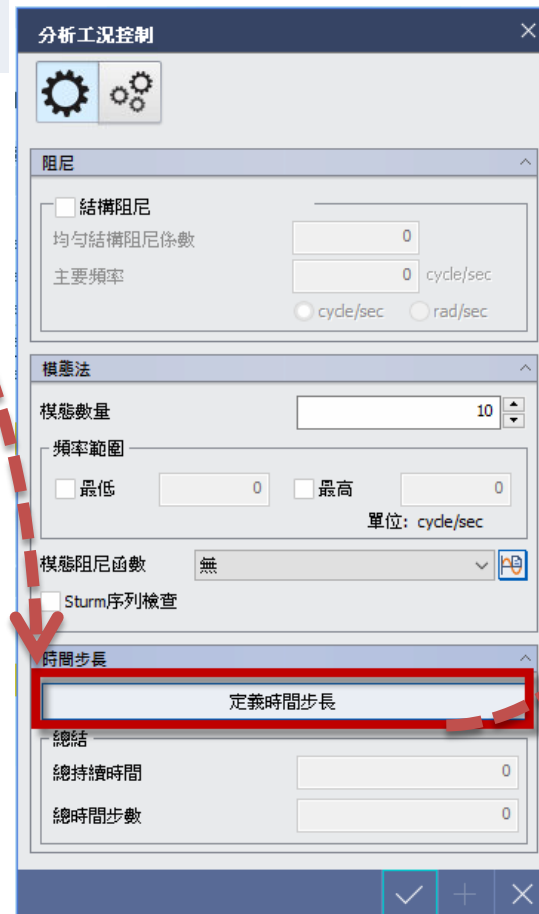
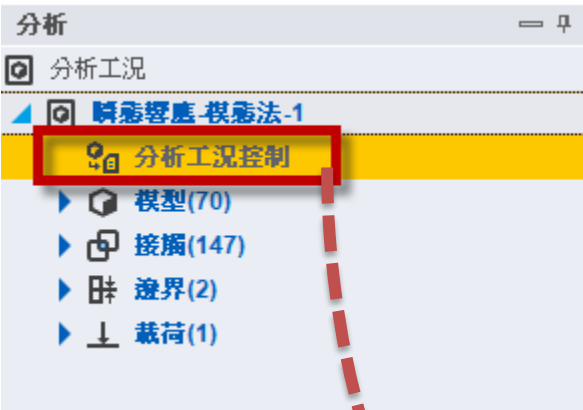
☐ 常數 ☒ 使用者定義

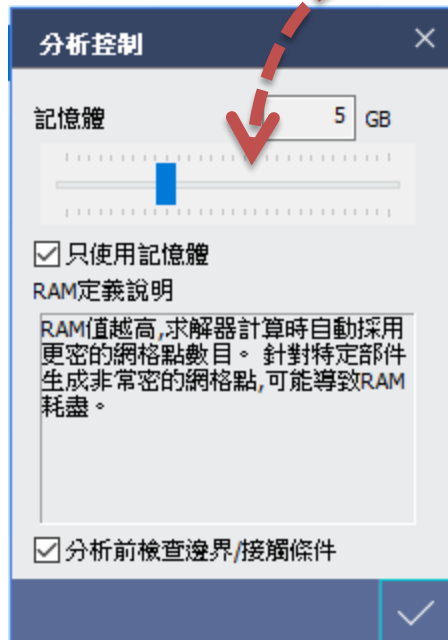
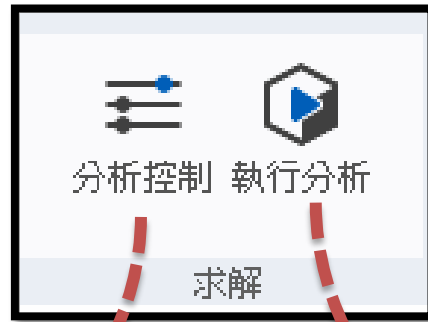
1 時間函數



時間-彎矩 = $M_y \times \text{時間函數}$

時間長0.3 sec/分成30次計算/每次結果都輸出





記憶體大小

- 1.計算速度
- 2.分析準確性

